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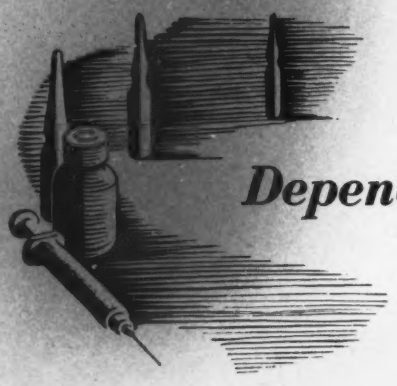

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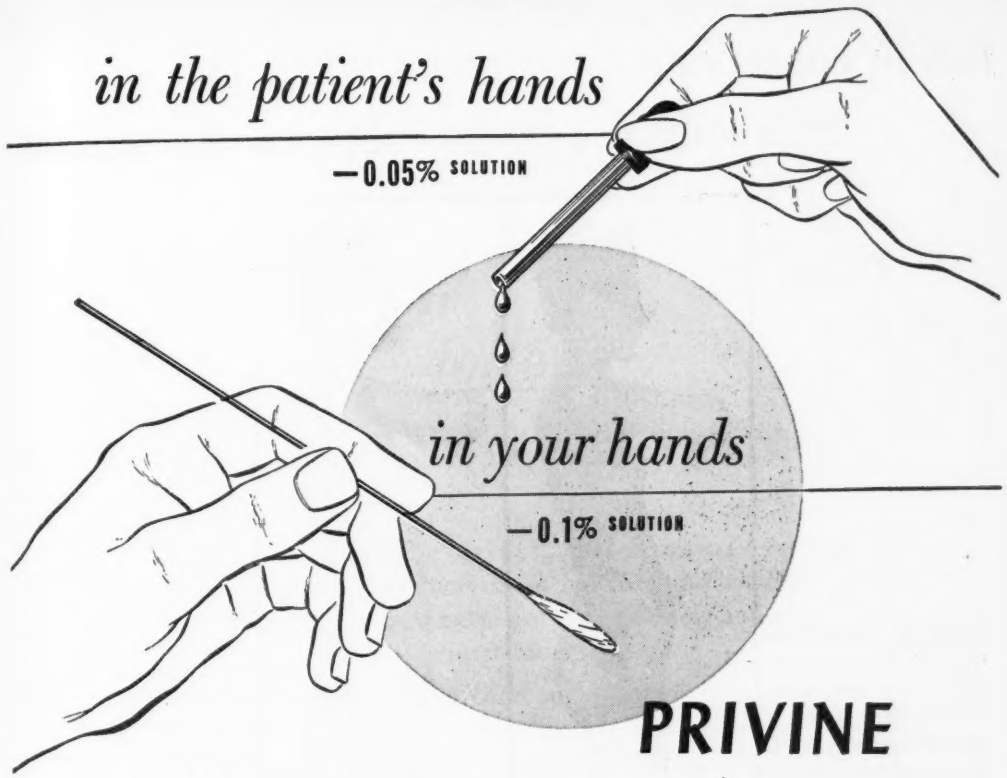

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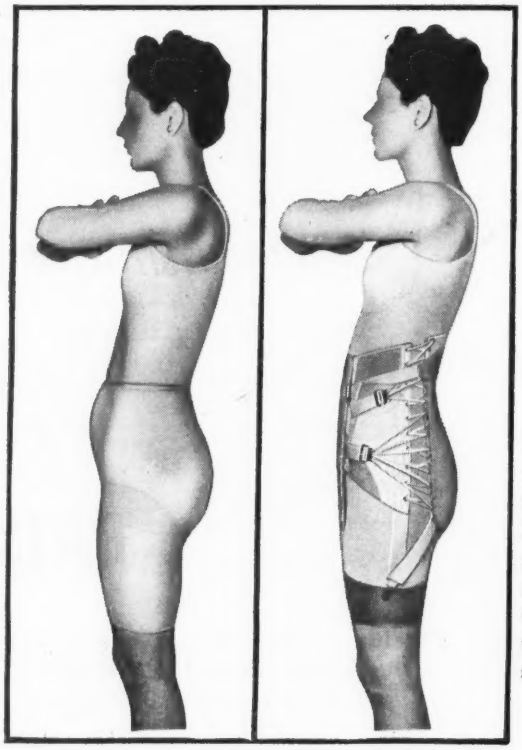

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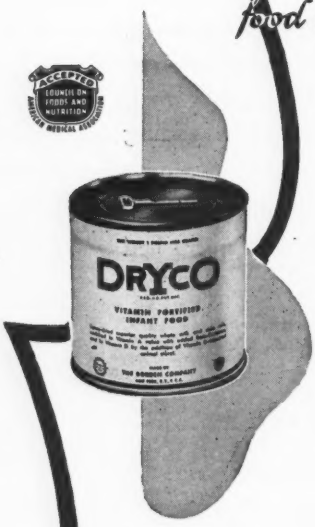

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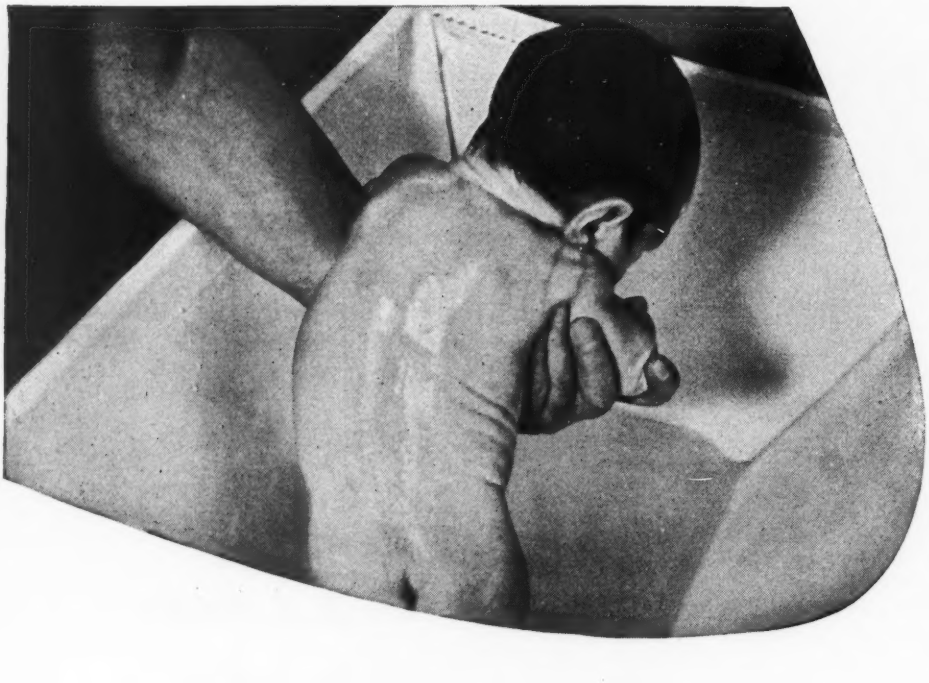

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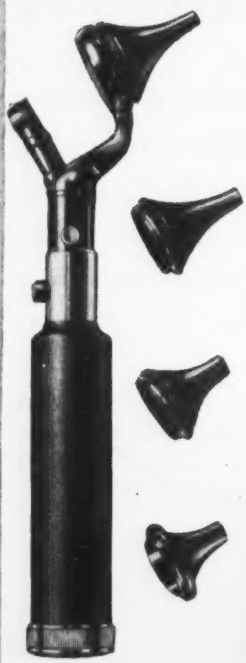

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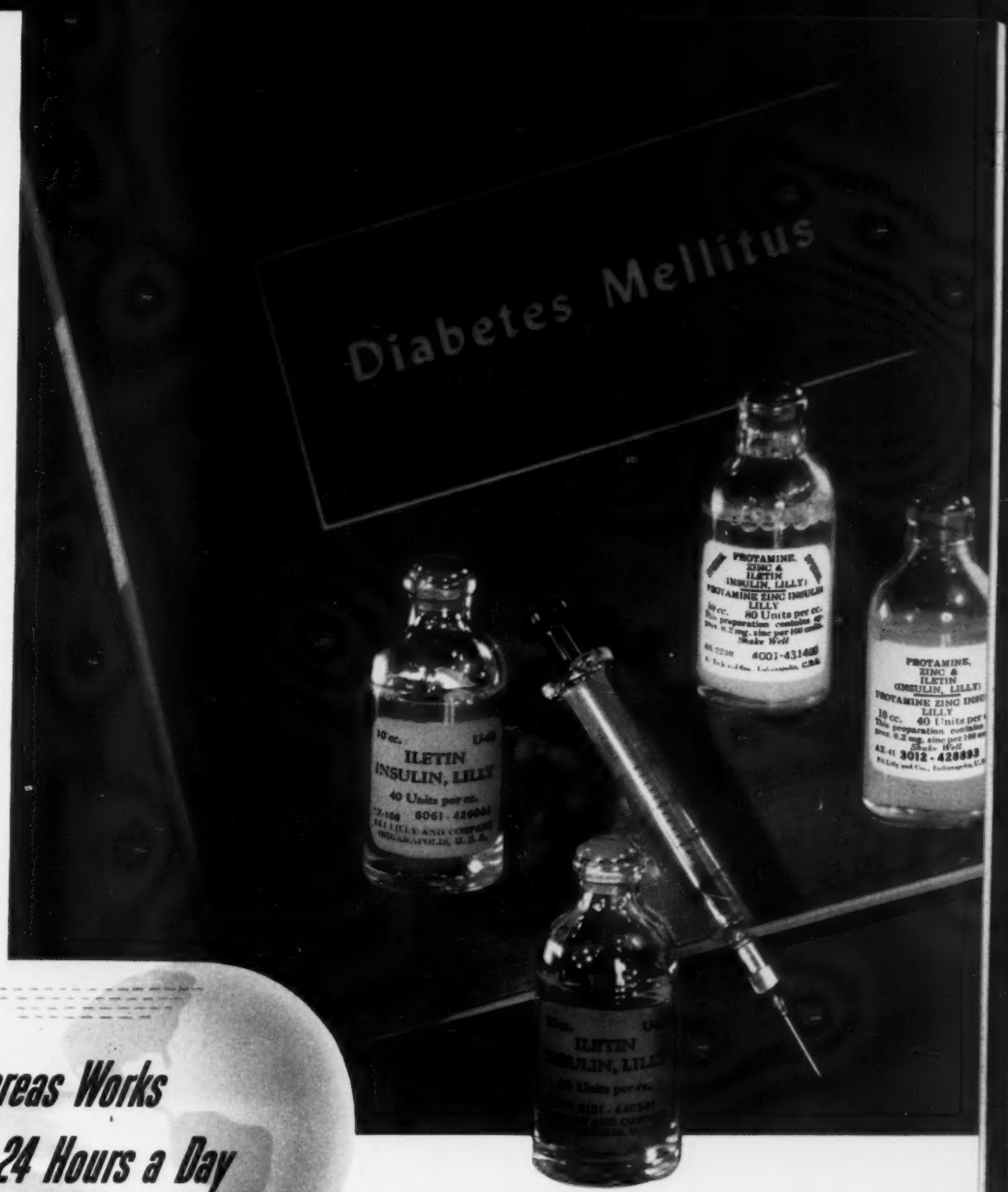

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Volume XLIX MARCH, 1948 No. 3

CANCER OF THE LARYNX AND HYPOPHARYNX

Galen M. Tice, M.D.
and Charles M. White, M.D.*
Kansas City, Kansas

Carcinoma of the larynx is a rather general term usually used to denote both the "extrinsic" and "intrinsic" forms. The terms extrinsic and intrinsic are surgical in origin and generally denote inoperability and operability respectively. The designation laryngopharynx and endolarynx as used by some[1] is perhaps more lucid. In general, tumors arising above the laryngeal wall of the epiglottis and the aryepiglottic folds are considered in the laryngopharynx or hypopharynx while those arising below are in the endolarynx. This discussion is concerned with cancers in both areas.

Carcinoma of the endolarynx occupies a unique position in the cancer field for it betrays its presence early with hoarseness, and it is easily accessible for treatment. Tucker[24] states that early diagnosis in cancer of the larynx means curability in a larger percentage of cases than in internal cancer in any other location. In early cases he expects to obtain a 60 to 85 per cent cure rate. Because of the above features this is one malignancy that should be approached with at least a degree of optimism.

From 1935 to 1947, 52 cases of cancer of the larynx have received x-ray therapy at the University of Kansas hospital under the direction of the senior author. Thirty-four cases received x-ray therapy alone while 14 cases received it post-laryngectomy and four cases received it post-laryngofissure. It is our purpose to review not only the results obtained but also other pertinent facts concerning diagnosis and the selection of the method of treatment.

Cancer of the larynx is principally a disease of males affecting men about ten times as frequently as women.[24] In our series 94.3 per cent of the cases were in men. The use of tobacco and alcohol has been mentioned in the past as an etiological factor; however, in more recent years there seems to be no increase in the incidence of the disease in women who have acquired the habit of smoking.

The etiology of cancer here as elsewhere is not definitely known. It is probable that local irritation does play a part. There may be so-called precancerous lesions. Keratosis of the larynx has been suggested as such a lesion. Clerf[3] feels that the keratosis in itself is benign but that a certain number either become carcinoma or predispose to its development. Certainly any patient with such keratoses should be kept under close observation. In our cases one man had had hoarseness for 10 years and two others for periods of from two to three years. It is difficult to believe that they had a cancer for that time. It is likely that in such cases some precancerous lesion is present.

The outstanding symptom of cancer of the endolarynx is chronic hoarse voice. This symptom occurred in over 90 per cent of our cases. Unfortunately this has not led the patient to seek advice until relatively late. The earliest case in our series had been hoarse for three weeks. This was an exception, for the average duration of hoarseness before the patient presented himself for treatment in the series was eight months. This does not include the three cases mentioned above who had had hoarseness for over 2½ years. Cutler[10] found hoarseness to be the early symptom in 95 per cent of the cases while the Jacksons[15] found it in 98 per cent of their series. If local pain should develop it usually means invasion of the cartilage.[11]

Recognition of the laryngopharynx lesion may be more difficult. Here the early symptoms are odynophagia, dysphagia, otalgia and cough with hoarseness coming after invasion of the larynx.[1] Hammond[13] points out that extrinsic cancer rarely gives a warning until it is far advanced. Orton[21] has found that in cancer of the laryngopharynx usually one year elapses from the time the patient realizes something is not right in his throat before treatment or advice is sought. Certainly one must exclude cancer first in any patient with chronic hoarseness or discomfort of the throat.

*University of Kansas Medical Center.

The diagnosis of cancer of the larynx is made by inspection and biopsy. Here, as in all malignancies, the biopsy is of paramount importance because of the rather heroic measures which are sometimes necessary. The inspection of the lesion is very important particularly in determining its location and extent, for this will decide the therapy to be employed. We rely upon the otolaryngologists who are much more capable in examination of this area than we. It should be mentioned here that the anatomy of the larynx and hypopharynx is well shown by x-ray in the lateral view. Coutard[5] used the x-ray film to help determine the size, extent and degree of invasion of the tumor.

Cancers of the laryngopharynx most commonly arise from: 1. Posterior wall. 2. Walls of the piriform sinus. 3. Postcricoid region. With the exception of those arising from the posterior wall, these carcinomas sooner or later invade the larynx.[1] Malignancies of the endolarynx may arise from: 1. Vestibule (epiglottis and false cord). 2. Ventricular cavity. 3. Vocal cord. 4. Subglottic area. All but about 15 per cent arise from the true vocal cord.[7] The lymphatics about the true cords are sparse so that generally metastases are a late manifestation of these cancers.[1]

The overwhelming majority of cancers of both the laryngopharynx and endolarynx are squamous cell in type. In general those of the laryngopharynx show the least differentiation and those of the true cord the most differentiation.[1] The radiosensitivity of a tumor may depend on its cell type and upon its location. Harris and Klemperer[14] have studied the relation of cell type and radiosensitivity in cancer of the larynx. They first point out that the histologic picture of a biopsy specimen may not be representative of the entire tumor as regards the degree of differentiation and other cytologic features. After studying the results of therapy in a series of cases, they concluded that the histologic structure is of minor importance in determining the radioresistance of laryngeal carcinoma. Cutler[7, 8] feels that the site of origin frequently determines the radiosensitivity of these neoplasms. He states that carcinoma arising from the false cord or epiglottis is radiosensitive while cancer of the true cord is radiosensitive in its early stages only. If the tumor has infiltrated underlying muscle with cord immobility, it is radioresistant.

Because of the loss of voice subsequent to laryngectomy, irradiation therapy was early tried for cancer of the larynx. Results were in general rather poor until Coutard demonstrated good results using protracted, fractionated x-ray therapy. Since then, results from x-ray therapy have been good enough so that the Jacksons[15] have stated that as the technique of radiation improves, the indications for laryngectomy diminish. Rather definite critera have evolved to aid in the selection of the type of therapy to be used in any given case. Naturally there are many instances where criteria overlap and the selection is very difficult. Perhaps the greatest advantage of x-ray therapy is the preservation of the laryngeal voice. This, however, should be given little thought when the chances for cure are greater with surgery.

As indicated above the most important consideration in the selection of treatment is the gross location and the extent of the lesion.[16] In cancer arising on the true cord, if it is treated early, laryngofissure offers about an 80 per cent cure rate.[16] This holds for lesions involving the middle third of one cord and even those that extend to the anterior commissure. del Regato[1] feels that these can be as well treated by x-ray as long as there is no invasion of the anterior commissure or fixation of the cord. If there is invasion of the anterior commissure, he recommends laryngofissure or laryngectomy. Except for the lesions which extend to the subglottis, where he recommends laryngectomy, del Regato[1] feels that the remainder are best treated by x-ray therapy. Jackson[16] also feels that in extrinsic lesions irradiation accomplishes as much as surgery in arresting the growth and prolonging life with the advantage of saving a voice. He selects irradiation in the following cases: 1. Cases unsuitable for laryngofissure in which laryngectomy is contraindicated by age, temperament, or physical condition. 2. Cases where the posterior portion of the cord is reached but mobility is not impaired. 3. Extrinsic lesions by origin or extension or cases in which there are cervical metastases.

Cutler[9] uses an interrupted technique of irradiation in two types of cases where the choice between x-ray and surgery is difficult. These are cases where the lesion is too far advanced for laryngofissure and there is partial mobility of the cord, and in those patients whose general condition is too poor for laryngectomy. He gives 3,000 to 4,000 roentgens in six days and then waits for 12 days. If there is regression, x-ray is the selected treatment and it is continued. If there is no regression, a laryngectomy is done.

Tucker[24] uses surgery for intrinsic cancer and x-ray for extrinsic. He adds that if a recurrence occurs following laryngofissure that surgery followed by x-ray is usually indicated. Quick[22] has gone so far as to say that modern irradiation therapy renders total laryngectomy obsolete. Although it sounds as though there is competition between the surgeon and radiologist, this is not, and never should be, the case. The authors quoted have stressed that there should be cooperation between the two and that in

some cases a combination of the two methods will be beneficial. The radiologist in particular must be most alert when he is treating a lesion amenable to surgery. If it does not respond favorably surgery should be done early.

The present efficacy of x-ray therapy depends upon the employment of methods of irradiation developed by some of the pioneers of radiology. In general it can be said that the method of treatment has been fairly well standardized and is patterned after that first used by Coutard.[4] Most of the cases in our series have been treated using 200 KV at 20 Ma using a 50 cm target skin distance. A filter of 1 mm Cu giving a HVL of 1.03 mm of Cu is used. For the more extensive lesions we use portals of 100 sq. cm or larger. For the endolaryngeal carcinomas we use a field of 8 x 8 cm. We deliver 300 r at a treatment giving six treatments a week. For the endolaryngeal tumors we treat until a depth dose of 4,500—5,000 r is reached. When we use the larger portals we give a depth dose of 4,000—4,500 r. For the neck of average diameter about 15 treatments to each lateral portal are required. If these are not sufficient, we increase the size of the daily dose so that practically all of our cases are given 30 treatments. This usually requires five to six weeks.

The plan of therapy we have used as outlined above is fairly similar to that used by others.[1, 12, 14, 17, 19, 23] del Regato[1] protracts his therapy to five or six weeks and uses large fields in the tumors of the laryngopharynx. Garcia[12] delivers a tumor dose of 4,400 r $\pm$ 10 per cent in 30 days but only if the port is $\overline{50}$ sq. cm. or smaller. For larger portals they lower the dosage. Harris and Klemperer[14] give a little smaller dose to the lateral portals but bring up the total dose by using an anterior field to which they give 1,000—2,000 r. Lenz[17, 18] gives a slightly smaller dose and protracts the treatments to 40, while Martin[19] gives a little larger dose in 20 treatments. Quick[23] states that the maximum safe dose should be given regardless of the radiosensitivity of the lesion. Coutard[6] and Cutler[8] feel that for the more infiltrative and radioresistant tumors the full dose should be given in a shorter time. The concentration therapy as used by Cutler[10] calls for the delivery of the full treatment in about 18 days. He has given the series in as short a period as 11 days but found a higher frequency of serious complications.

In general, then, the treatment we have used is much the same as that elsewhere except that our total dose is a little higher.

Some cases may benefit by a combination of surgery and x-ray. Lenz[17] feels that when the tumor has invaded the laryngeal cartilage it is best treated by surgery followed by x-ray. In our series four were treated by laryngofissure with subsequent x-ray and 14 were treated by laryngectomy followed by x-ray. X-ray may precede surgery particularly when x-ray is used to treat cancer amenable to surgery and the response of the tumor is not adequate. To determine this Coutard[5] has used the x-ray film as an aid to inspection in determining the regression of the tumor. Quick[23] and Cutler[10] both feel that properly given irradiation does not seriously hamper subsequent surgery. Brunschwig[2] has reported a series of five cases in which he has done panlaryngectomy following radiation therapy with good palliation.

The x-ray therapy as outlined above is a major procedure. The severity of the reaction expected should be explained to the patient at the first treatment. Usually the first 15—20 treatments cause little difficulty but then the patient develops a severe mucositis with pain on swallowing. The voice becomes hoarse and an edema of the larynx occurs which occasionally may necessitate tracheotomy. The patient loses a desire for food and has a thick, tenacious mucous which is difficult to raise. We initially encourage a good diet, daily exercise and give multivitamins daily. Occasionally it is necessary to hospitalize the patient for tube feeding and the administration of intravenous fluids and glucose. For the skin reaction we have found Nupercainal or Alvagel ointment to be efficacious. During the severe reaction the patient requires considerable encouragement and sympathy. Once healing begins it continues rather rapidly. The skin reaction may show remarkable improvement in a few days time.

The difficulties described above are due to the x-ray reaction. There are also others which Coutard[4] lists as the late complications. There may be persistence of the dryness of the mouth and throat and loss of taste for 2—3 years. Cutaneous atrophy with discoloration and telangiectasis may occur. More serious yet is ulceration and chondronecrosis. Cutler[17] says that chondronecrosis is apt to occur if the cartilage has been invaded by bacteria or cancer cells. He feels that it occurs more readily when large doses of x-ray are given in a short time. When the sulfanilamides were developed Quick[23] suggested their use to combat infection and thereby decrease the incidence of chondronecrosis. Hemorrhage may occur particularly in the lesions of the laryngopharynx. We have recently had a patient whose death was due to a hemorrhage from a lesion of the piriform sinus. Although the serious complications described may occur they are not common. The x-ray reaction itself is of the most importance to the patient.

It is difficult to evaluate and compare the results of x-ray therapy in cancer of the larynx as reported by various authors. Some authors have had the opportunity of treating less advanced cases where the

results are naturally better. Our series is made up for the most part of patients who are in or nearing the hopeless stage. This is shown by the fact that in the 34 patients treated by x-ray alone, 21 of them (61 per cent) had required a tracheotomy before treatment or had palpable cervical nodes. Either is a bad prognostic sign. Lenz[18] states that in cases requiring tracheotomy only about five per cent may be cured and that about 10 per cent of cases with neck nodes can be benefited. Of these 34 patients treated by x-ray alone, 24 are dead, eight are living, and two we have been unable to follow. For statistical purposes we assume that those we have been unable to follow are dead because of their cancer. The ones who have died have done so rather promptly. Ninety-one per cent of the 24 who are dead died in less than two years time. Cutler[10] has had much the same experience. For this reason two-year, three-year and five-year arrest results are used by various authors. For our entire series we have 23.4 per cent two-year arrests and 19 per cent five-year arrests. In the patients treated with x-ray alone, all of whom were advanced cases, we have 19 per cent two-year arrests and 10 per cent five-year arrests. For a comparison of results by various authors see Table I. The authors quoted in the table use in general the same method of treatment. We feel that the different results reflect in some measure the stage in which the patients are seen. The average five-year survival rate of all the results quoted is about 20 per cent. These are the inoperable cases.

TABLE I

Results in Treating Advanced Cancer of the Larynx

Author	Two Year Arrests		Five Year Arrests	
	X-ray	X-ray plus Surgery	X-ray	X-ray plus Surgery
Coutard	32%		27%	
Cutler			23%	
Delario—Reporting Average of Other Authors			19%	
Garcia et al			28%	
Lenz			19%	
Martin	16%			
Tice & White	19%	34%	10%	33%
	Both Series 23.7%		Both Series 19%	
Tucker				30%

Lenz[18] feels that in cases suitable for laryngofissure x-ray will give as good results as surgery, but Jackson[16] points out that in properly selected cases surgical treatment has the best statistical results. In the early cancer of the true cord laryngofissure gives 80—85 per cent cures.[15, 24] Laryngectomy in suitable cases yields 50—60 per cent cures.[16, 20] To compare with these results Cutler[10] using x-ray in cases where laryngofissure could have been done obtained 71 per cent five-year cures and in cases where laryngectomy could have been done there were 55 per cent five-year cures.

The results given above indicate that where the cancer permits a choice between x-ray therapy and surgery the social status and occupation of the patient should be considered. The preservation of laryngeal voice would be of greatest importance to some patients. It is feasible that the intelligent patient may be allowed to make the choice.

CONCLUSION

1. Cancer of the endolarynx gives symptoms early and has a high rate of curability. Cancer of the laryngopharynx may give symptoms late but it is usually radiosensitive and responds quite well to irradiation.

2. The radiosensitivity of cancer of the larynx depends more on its site of origin than on its histology.

3. The two most important features in the treatment are:

   a. Selection of the type of treatment for the patient, i.e. irradiation or surgery depending upon the origin and extent of the cancer.

   b. The technique of treatment. The most generally used irradiation is that of 200 Kv giving a tumor dose of 4,000—5,000 r in about 30—40 days. The indication for laryngofissure or laryngectomy is quite definite.

4. In the early properly selected case laryngofissure gives better statistical results than irradiation. In patients needing laryngectomy irradiation will give as good results as the indicated surgery.

5. Irradiation results in about 20 per cent of five-year cures in inoperable advanced cases of cancer of the larynx.

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THE TREATMENT OF LEUKEMIA AND ALLIED DISORDERS WITH URETHANE (ETHYL CARBAMATE)* **

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In 1946 Haddow and Sexton[1] observed that urethane (ethyl carbamate) inhibited the growth of tumors in experimental animals. While testing the effect of the drug on advanced cases of malignant disease in man, a fall in the leucocyte count was observed which suggested the trial of urethane in patients with leukemia. Paterson, Thomas, Haddow and Watkinson[2] reported the results on patients with leukemia. Thirty-two cases in all were treated, 19 of which were of the myelogenous type (18 chronic, 1 acute) and 13 of the lymphogenous type (12 chronic, 1 acute). The investigators concluded that the effects of urethane therapy were remarkably similar to those obtained by the standard x-ray methods with which they were compared. No permanent benefit resulted from the therapy as relapses occurred. They also administered urethane in 13 cases of advanced carcinoma of the breast and in 11 cases of other types of malignant disease. In three cases of carcinoma of the breast and four of the miscellaneous group there was a temporary diminution in the size of the lesions.

Schulze[3] treated seven cases of chronic leukemia (five myelogenous, two lymphatic) and observed the best results in the myelogenous type. The splenic tumors decreased in size and when anemias existed, the hemoglobin and erythrocytes increased. In a subsequent report Schulze, Fritze and Müller[4] stated that in true polycythemia the splenic tumor was reduced in size but the blood picture was not altered. Chronic lymphadenoses showed only a reduction in leucocytes. Urethane had no effect in acute myelosis. Dustin[5] treated eight cases of chronic myelogenous leukemia with favorable results in five patients.

In this study the preliminary results of urethane therapy in 27 patients with leukemia or allied disorders will be reported. The following cases were observed: chronic myelogenous leukemia, seven; chronic lymphatic leukemia, five; acute lymphatic leukemia, four; acute myelogenous leukemia, one; acute monocytic leukemia, four; polycythemia vera, four; reticuloendotheliosis, one; and multiple myeloma, one. The drug was administered orally in a simple solution so that each ounce contained two grams of urethane. Careful periodic clinical and hematologic observations were made.

CHRONIC MYELOGENOUS LEUKEMIA

A total of seven patients with chronic myelogenous leukemia were treated with urethane. It is in

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this group of patients that the best results were obtained. Observations were made over a period of from two and one-half to eleven months. For purposes of discussion these will be divided into two groups, those who had received previous therapy of any kind, and those who had received x-ray therapy before urethane was administered.

Four patients had never received previous therapy. From three to six grams of urethane per day was given in divided daily doses until the desired hematologic and clinical response was obtained. Figures 1 and 2 illustrate the hematologic response. Figure

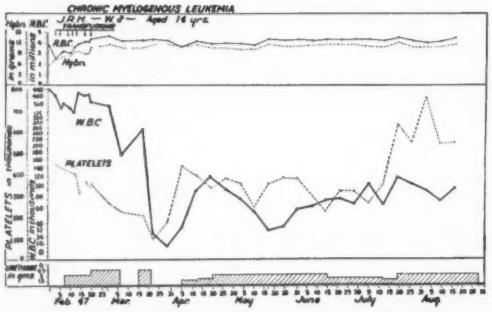

Figure 1. The response to urethane in a case of chronic myelogenous leukemia. The clinical response has been excellent. In December, 1947, his clinical condition was still satisfactory.

1 illustrates a case still under treatment (Dec. 1947). The total dosage of the drug has been 589 gm. in 10.5 mo. and illustrates the low level of toxicity. The patient is clinically in excellent condition and in December 1947 the leukocyte count was 21,000, erythrocyte count 4,300,000 and hemoglobin 74 per cent (11.5 gms.). Figure 2 illustrates an excellent hematologic response. In this case the NPN and

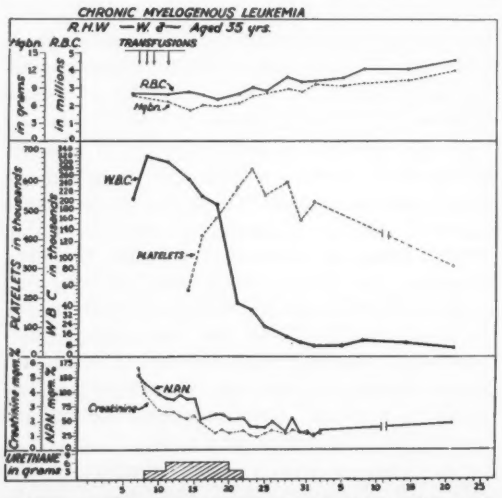

Figure 2. Chronic myelogenous leukemia. Note the decrease in the NPN, creatinine and leucocyte level after urethane therapy. The erythrocyte count and hemoglobin also increased.

creatinine were also elevated. After urethane therapy (69 gm. in 14 days) the leucocyte count, NPN and creatinine became normal and there was a gradual rise in the erythrocytes and hemoglobin. The spleen markedly decreased in size in three patients. One patient failed to respond to urethane and improved markedly with subsequent x-ray therapy.

Three patients were observed who had previously received x-ray therapy and were in the terminal stages of their leukemic disease. These patients had marked splenomegaly and severe anemia. In each case urethane failed to affect the course of the disease in any manner whatsoever.

CHRONIC LYMPHATIC LEUKEMIA

Five cases were treated. They were observed over periods of from one to six months. Only one had previously been given x-ray therapy. Four of the patients were of the true leukemic type with leukemic peripheral blood findings. One patient had lymphadenopathy, generalized, with a normal peripheral blood. A lymph node biopsy and bone marrow studies revealed chronic lymphatic leukemia of the sub-leukemic type.

Four of the patients responded well to urethane therapy (average daily dosage, 3 grams.). Usually, however, the patient complained of nausea or anorexia long before the lymph nodes decreased to the desired size. It was possible in only one case to cause the lymph nodes to entirely disappear. In general the response to urethane was only partially satisfactory and not as good as observed with x-ray therapy. Subsequent supplemental x-ray therapy has been necessary in two cases.

One patient was treated who had previously received x-ray therapy. (Figure 3). The lymph nodes and spleen were enlarged and a severe anemia existed requiring numerous transfusions. The leucocyte count dropped tremendously and the lymph nodes and spleen decreased markedly in size (345 gms. urethane in 91 days). The anemia could not

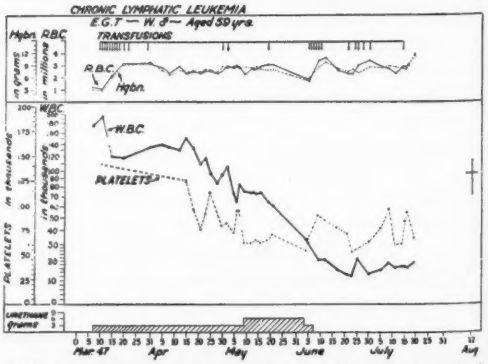

Figure 3. The response to urethane in this case of terminal chronic lymphatic leukemia was not good. X-ray therapy had been given previously over a long period of time. Although the leukemic condition improved clinically and hematologically the anemia did not and numerous transfusions were required.

be corrected and the patient ultimately expired from his leukemic disease.

THE ACUTE LEUKEMIAS

Fourteen patients with various acute leukemias were treated with urethane. In general the results were poor. The following cases were treated: acute lymphatic leukemia, four; acute myelogenous leukemia, one; and acute monocytic leukemia, four.

The dosage of urethane was less than given in the chronic states. One gram a day was given initially and elevated to two grams a day if tolerated well. No acute fulminating untoward reactions were observed. Whether or not urethane modified the course of the disease is indeed doubtful. No dramatic response was observed in any case.

POLYCYTHEMIA VERA

Four patients with polycythemia vera were treated and were observed over a period of from 2½ to 5½ months. The response to urethane was disappointing, both clinically and hematologically. Only a slight decrease in erythrocytes occurred. Urethane therapy is not a method of choice.

MISCELLANEOUS DISEASES

One case of reticuloendotheliosis and one of a fulminating multiple myeloma were treated with urethane. In neither instance was the clinical course of the disease affected.

DISCUSSION

The available reports on urethane therapy are chiefly in the British and German journals. The best clinical and hematologic results in our series were obtained in chronic myelogenous leukemia. This is in agreement with others.[2, 3, 4] The response to urethane in chronic lymphatic leukemia is less good and more variable than in myelogenous leukemia. This is also in accord with other reports.[2] Urethane had no beneficial effect in either myelogenous or lypmhatic leukemia in the terminal stages when x-ray therapy was no longer of value. The therapeutic effect in the acute leukemias was disappointing. The results in polycythemia vera were not all to be desired.

Perhaps the most distressing symptoms observed during the oral administration of urethane are nausea and anorexia. Therapy had to be discontinued in five patients. Other toxic reactions are rare but do occur. Paterson, Thomas, Haddow and Watkinson[2] reported a marked leukopenia in a case of carcinoma of the breast. A moderate leukopenia was observed in nine other cases. In one case of myelogenous leukemia they reported a late and dangerous drop in both the white and red cells, but recovery took place after transfusion. One patient died with aplasia which the investigators felt was partly due to urethane. Webster[6] reported a fatality in a case of chronic myelogenous leukemia after treatment with urethane.

In one of our cases of chronic lymphatic leukemia there was a decrease in all the formed elements including the blood platelets. Urethane was discontinued and the blood picture returned to normal very rapidly. The blood platelets were decreased in six other patients with chronic myelogenous leukemia, chronic lymphatic leukemia and polycythemia vera. No hemorrhagic episode occurred in any individual. The details of these untoward results will be reported later.

The total dosage of urethane to be used orally in the treatment of leukemic diseases is indeed variable. This has been noticed by other investigators.[2] The average dosage was three to six grams a day in divided doses until the desired therapeutic response was obtained. The total amount used in a given case is again variable as a maintenance dose should be ultimately established, this amount being one to two grams a day. When the dosage is being considered, the amount necessary to produce the desired initial effect and the maintenance dosage should be considered in daily quantities rather than total amounts given over a period of time.

The method of action of urethane is not known. Dustin[5] and Webster[6] have published excellent reviews on the possible modes of action. Schulze[3] states it may be due to its toxic effect on mitosis. Kirschbaum and Lee[7] studied the effect of urethane on the leucocytes of mouse myelogenous leukemia and observed that the administration of a single anesthetic dose produced within 24 hours a drop in the leukocyte count and the appearance of many mature cells in the bone marrow. Other observations on mice are of interest[8] in that doses of urethane that affected leukemic marrow produced no striking cytologic alterations in the bone marrow of normal mice.

SUMMARY

The treatment of chronic myelogenous leukemia with urethane (ethyl carbamate) produces about the same clinical and hematologic results as standard x-ray therapy.

The therapeutic response of chronic lymphatic leukemia is less satisfactory and more variable than observed in chronic myelogenous leukemia.

The clinical course of the acute leukemias is not affected by urethane.

Polycythemia vera responds only partially to urethane. One case of reticuloendotheliosis and one of multiple myeloma were treated and the clinical course of the disease was not affected in either instance.

Nausea and anorexia are not infrequent occurrences when the drug is given orally. Other toxic effects have been noticed and the patients treated

should be observed at frequent intervals. Continued investigation is necessary to establish the proper procedure, dosage, toxic levels and modes of action of urethane.

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EPIDERMOID CARCINOMA OF THE HAND*

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In the past 25 years, 27 patients with epidermoid carcinoma of the hand have been treated at the University of Kansas Medical Center. These patients were all treated in the hospital. A study of these 27 patients has stimulated us to formulate a general plan for the treatment of this type of carcinoma.

Of epidermoid carcinomas in general, Warren and Hoerr[1] have found the hand and fingers involved in 20 per cent of all cases. Campbell[2] and Mason's[3] reviews indicate that the incidence is five to 10 per cent.

A very high percentage of the cases of epidermoid carcinoma of the hand is found in the aged. Adair[4] emphasized the importance of degenerative changes in the skin of the aged which predisposes to this type of lesion. In senile skin there is atrophy of the sebaceous glands and loss of subcutaneous tissue. This type of skin cracks easily, ulcerations heal slowly, and the factor of chronic irritation due to sun, exposure to weather, and minor trauma apparently predisposes to malignant change. The disease is more common to males.

The dorsum of the hand has several anatomic peculiarities. In this area the skin is thin; there is little subcutaneous tissue; the blood supply is easily compromised; the underlying tendons are readily destroyed if exposed; and function is impaired by long immobilization due either to the extent of the growth or to the treatment.

Writers on this subject, Gates and Warren,[5] DeBell and Stevenson,[7] Mason[3] and Adair[4] agree that epidermoid carcinomas of the dorsum of the hand are usually of low grade malignancy. These tumors remain localized for a considerable period, and spread by local extension and lymphatics is comparatively late. A high percentage of cures may be obtained if lesions are adequately treated, even late in the course of the disease.

Lymph gland involvement is of paramount importance in prognosis and treatment of epidermoid carcinoma of the hand. Campbell[2] reported that 44 per cent of the cases seen at the University of Michigan had palpable epitrochlear or axillary nodes at the time of initial examination. Of this group, 50 per cent developed recurrences or ultimately died of carcinoma. DeBell and Stevenson[7] found metastatic carcinoma in only 50 per cent of their cases in which gland dissection was done for palpable nodes. However, these authors recommend that enlarged nodes should be considered malignant until proved otherwise. Taylor, Nathanson, and Shaw[8] demonstrated that lymph nodes larger than 2 cm. in diameter usually contain metastatic carcinoma. Mason[3] states that he failed to find metastatic carcinoma in nodes removed which were not clinically palpable.

In a comprehensive analysis of epidermoid carcinoma, Warren and Hoerr[1] demonstrated that the size of the lesion when first treated is the most important factor in prognosis. They found that lesions larger than five cm. in diameter result in an 82 per cent mortality as compared with a mortality of seven per cent when the lesions are less than one cm. in diameter. These authors found a definite relationship between the size of the tumor and the extent of lymph node involvement. Lesions one cm. in diameter had metastases in five per cent, and lesions five cm. in diameter had metastases in 40 per cent of the cases.

An analysis of the 27 cases of carcinoma of the dorsum of the hand treated at the University of Kansas Medical Center reveals that there has been no clear cut outline of therapy for this tumor. These cases have been admitted at random on the x-ray, plastic surgery, and general surgery services. The group is too small to allow valid statistical analysis of long time survival, but it may be of interest to outline the procedures and results of the treatment used. (Table I).

In this series, 20 patients were males and seven

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females, an approximate ratio of 3:1. The average age was 71.2 years, the oldest patient being 92 and the youngest 50.

All lesions were biopsied for accurate diagnosis and grading. They were all graded Broders I or II. The size of the lesion at the time of initial examination was one of the important factors in determining treatment. Of 16 cases treated by x-ray, or excision, with or without graft, all but one had lesions less than four cm. in diameter. Although two patients had local recurrences, no metastatic disease or death from cancer was reported from this group of 16 cases. Of the remaining 11 cases requiring extensive local excision or amputation, and axillary dissection, all but one had lesions larger than five cm. in diameter. Many of these lesions were deep and fixed to the underlying structures. Seven cases had axillary metastases when first seen. Of these cases, three are living and well three, four, and six years after excision and axillary dissection. One patient succumbed on the 11th postoperative day, two patients died within one year of recurrent disease. Three of the patients could not be followed. Five of the older patients died of other diseases without evidence of recurrence of the cancer.

CONCLUSIONS

This brief summary demonstrates the importance of the size of the lesion in relation to its treatment and prognosis.

Biopsy of all lesions is advised for diagnosis and grading.

Surgical excision of epidermoid carcinoma of the dorsum of the hand, with or without skin grafting, is recommended for the local treatment.

Axillary and epitrochlear dissection is recommended if nodes are palpable.

Amputation is reserved for those cases having

TABLE I

Table I summarizes the pertinent factors in the study of the above 27 cases.

	Age	*Sex*	*Race*	*Size in cm.*	*Depth of Lesion*	*Palpable Nodes*	*Treatment*	*Results*
1	64	M	W	2	Superficial	no	Radium needles	Well 3 years
2	69	M	W	3	"	no	X-ray	Well 2 years
3	83	M	W	2	"	no	X-ray	Not traced
4	72	M	W	2	"	no	X-ray	Died 2 years another disease
5	80	M	W	3.5	"	no	X-ray	Well 5 years
6	88	M	W	2	"	no	X-ray	Well 6 years
7	65	M	W	3.5	"	no	X-ray	Died 3 years another disease
8	68	F	W	6	"	no	X-ray, later excision and graft	Died 10 years another disease
9	67	F	W	1.5	"	no	X-ray, later excision and graft	Well 7 years
10	76	F	W	4	"	no	Excision only	Not traced
11	50	M	W	1.5	"	no	Excision, x-ray to epitrochlear and axillary glands	Well 10 years
12	64	M	W	3	"	no	Excision, x-ray to epitrochlear and axillary glands	Well 3 years
13	72	M	W	3	"	no	Excision and skin graft	Died 2 years another disease
14	83	F	W	2.5	"	no	Excision and skin graft	Not traced
15	69	M	W	4	"	no	Excision and skin graft	Well 4 years
16	53	M	W	2	"	no	Excision and skin graft	Well 6 months
17	76	M	W	4	deep	no	Partial amputation, fingers and hand-skin graft	Well 4 years
18	76	M	W	6	"	yes	Partial amputation, fingers and hand-skin graft	Died 11th post-op. day
19	69	M	W	5	"	no	Partial amputation, fingers and hand-skin graft	Well 2 years
20	85	M	W	11	"	no	Amputation forearm	Died 2 years another disease
21	64	F	W	6	"	no	Amputation forearm	Well 3 years
22	92	F	W	5	"	yes	Amputation forearm	Well 6 months
23	68	M	W	10	"	yes	Amputation forearm—epitrochlear and axillary node dissection	Well 3 years
24	56	M	C	8	"	yes	Amputation forearm—epitrochlear and axillary node dissection	Well 4 years
25	58	M	W	6	"	yes	Interscapulothoracic amputation	Died 1 year of recurrence
26	67	F	W	8	"	yes	Excision—skin graft—axillary dissection	Well 6 years
27	64	M	W	6	"	yes	Arsenic paste elsewhere, later partial amputation hand, and axillary and epitrochlear dissection	Died 1 year of recurrence

large ulcerated areas with destruction of the tissues of the hand and marked deformity.

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THE NEUROGENIC BLADDER OF POLIOMYELITIS

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Urological complications of poliomyelitis occur often enough to warrant an interest in the subject. It is the purpose of this paper to describe the neurogenic bladder of poliomyelitis and to discuss some of the complications of the disease.

Temporary dysfunction of the urinary bladder is seen in many inflammatory, degenerative, and traumatic diseases of the central nervous system. With such dysfunction the term neurogenic bladder is used to signify altered nerve supply to the bladder. Anatomically there may be three types: (1) those resulting from supranuclear disease, (2) those resulting from disease in the spinal cord, (3) those resulting from disease of the afferent or efferent neurones to the bladder. The classification of McLellan is of more practical value.[1]

1. The Uninhibited neurogenic bladder results from disease in the higher centers or cord which causes loss of cerebral control of the bladder reflex. (Example—loss of control of bladder following a cerebral accident.)

2. The Reflex neurogenic bladder results from complete section of the cord above the bladder reflex (sacral cord.)

3. The Autonomous neurogenic bladder results from destruction of the motor and sensory components of the reflex, such as may occur with a crushing injury to the sacral cord.

4. The Atonic neurogenic bladder results from disease of the posterior columns of the cord with loss of the sensory component of the bladder. (Example—tabes dorsalis.)

It is believed that the nervous control of the bladder consists of a simple spinal reflex and a suprasegmental conditioning reflex.[2] The afferent and efferent fibers of the spinal reflex are mediated mainly through the pelvic nerve of the parasympathetic system. The sensory and proprioceptive sensations are carried by fibers running with the parasympathetic nerves. The sympathetic system plays no significant role in the normal act of micturition and can be disregarded. The normal stimuli of the reflex is the filling of the bladder until the proprioceptive impulses have reached a sufficient threshold to produce discharge of the motor neurones resulting in a voiding contraction. In the normal individual the discharges of the lower motor neurones are influenced by the corticospinal tract or efferent limb of the suprasegmental reflex. The activity of the upper motor neurones in turn is guided by the sensory impulses arising from the bladder, which are transmitted up the various afferent pathways to consciousness. Of secondary importance is the voluntary sphincter which is innervated by the internal pudendal nerves. The external sphincter can be closed voluntarily, but relaxation is involuntary.

Poliomyelitis is a disease of the anterior horn cells of the spinal cord, characterized by paralysis of somatic muscle. Although visceral lesions are reported in fatal cases of poliomyelitis, we do not anticipate paralysis of smooth muscle organs. Involvement of the urinary bladder and colon, however, occurs in 10 to 20 per cent of the cases of acute poliomyelitis.[3] Toomey reported 60 cases of acute urinary retention in 386 cases of acute poliomyelitis.[4] In 42 of Toomey's cases the bladder paralysis preceded the somatic involvement. Temporary paralysis of the bladder occurred in eight per cent of the poliomyelitis cases seen at the University of Kansas Medical Center during the 1946 epidemic. One case of permanent paralysis of the bladder was seen and will be described later. Careful review of the literature fails to show a similar case. Generally the bladder dysfunction like the atony of the colon is of short duration and can be relieved by intermittent catheterization or indwelling catheter for a few days.

The nuclei of the motor neurones to the bladder and colon take their origin from the visceral efferent column which is posterior and lateral to the

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anterior horn area of the spinal cord. The efferent or motor neurones from the second, third and fourth sacral segments pass through the anterior horn and must be susceptible to disease in that area, causing temporary or permanent damage to the motor neurone, depending upon the amount of pathology present in that area. A bladder devoid of motor innervation should then present the following characteristics:

1. Sensation to temperature, pain, and proprioceptive stimili should be present since the afferent limb of the bladder reflex is intact.

2. Intravesical hydrostatic pressure should be low and bladder capacity high.

3. The final voiding contraction should be absent.

4. Voiding should occur only by overflow incontinence.

This type of neurogenic bladder is produced by poliomyelitis as demonstrated by numerous cystometric examinations of patients with bladder paralysis due to acute poliomyelitis. Figure 2 shows the characteristic cystometrograph. Figure 1 shows a normal cystometrograph. This type of neurogenic bladder can also be produced by the administration of tetra-ethyl ammonium bromide which will produce a total blockade of the autonomic ganglia in man.[5] It has also been seen by the author in a soldier who had extensive shattering of the pelvis with loss of the pelvic nerves bilaterally. For this type of bladder we suggest the term "Motor Neurogenic Bladder."

REPORT OF A CASE OF PERMANENT BLADDER PARALYSIS DUE TO POLIOMYELITIS

R. C. No. 34711, a boy aged 16 years, was admitted to the University of Kansas Medical Center on October 13, 1946, with typical signs and symptoms of acute poliomyelitis. The onset of the illness occurred three days prior to admission and was characterized by fever, fatigue, progressive paralysis of the legs, and urinary retention requiring catheterization every six hours. On admission there was partial paralysis of the left biceps muscle, complete paralysis of both legs and thighs, and the abdominal muscles below the umbilicus. The cerebrospinal fluid showed 676 leucocytes per c.c., 92 per cent polymorphonuclears and eight per cent lymphocytes. Cystometric examination on numerous occasions revealed an atonic neurogenic bladder as shown below. In spite of many attempts at voiding, this patient was never able to elicit a voiding contracture. Resection of the internal sphincter likewise was futile. One year after the onset of the disease he was still on catheter drainage and had shown no appreciable improvement in the extensive paralysis of his lower extremities. There was complete motor paralysis of both legs, thighs, and hips without sensory loss. Vesical calculi were crushed transurethrally on three occasions.

SUMMARY

The neurogenic bladder of poliomyelitis is described for the first time in the light of cystometric study. It is suggested that the term "the motor neurogenic bladder of poliomyelitis" be applied to this condition.

Temporary paralysis of the bladder occurs commonly in poliomyelitis. This is the only case of permanent paralysis of the bladder we have been able to discover.

If it is necessary to catheterize the bladder in poliomyelitis, every effort should be made to sterilize the urine later. Recumbency calculi should be watched for by periodic x-ray examinations.

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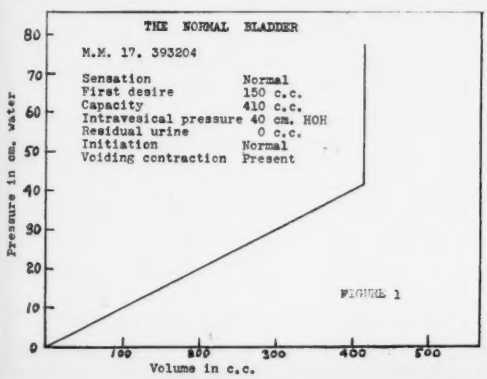
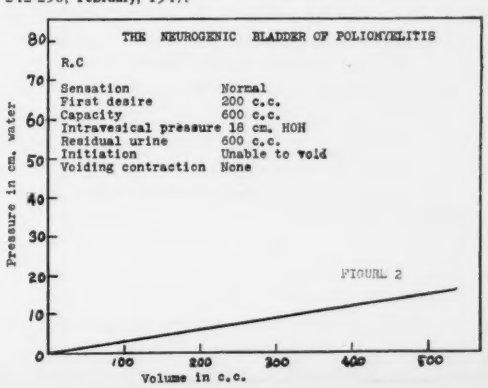




Cancer Control Activities at University of Kansas Medical Center

During 1947, 853 cancer cases were recorded in the central cancer registry of the State Board of Health from the University of Kansas Medical Center.

Facilities for treating cancer at the University of Kansas Medical Center are progressively increasing as local and national interest in the cancer problem increases. New surgical techniques for treatment of cancer of the cardiac end of the stomach, pancreas, esophagus and lungs are being used, thus offering some hope to the victims of these malignancies. The Surgical-Pathological Conference meets every Wednesday morning through the year.

Radiation therapy is administered by any one of four x-ray units, the largest of which has a capacity of 250 KVP. It is not unusual for 40 patients to receive roentgen or radium therapy in the Department of Radiology in one day. Two hundred milligrams of radium is available and through the kindness of the Kansas Division of the American Cancer Society a considerable quantity of additional radium has been placed on order.

We have available androgens and nitrogen mustard supplied through the recommendation of the Therapeutic Trials Committee of the Council on Pharmacy and Chemistry of the American Medical Association, so that we may play our part in the clinical investigation of the use of these substances in the treatment of malignancies.

In the diagnostic field we have the benefit of experience of department heads of national reputation, laboratory facilities prepared to do tissue study, general and special bacteriological work, general laboratory work and biochemistry. A blood bank prepared to supply blood on immediate notice is available. The diagnostic x-ray department is supplied with good equipment but is in need of more apparatus to handle the peak load each day.

Teaching of cancer diagnosis is begun in the sophomore year. A definite portion of the course in pathology is devoted to the study of all forms of malignancy. Through the next two years the student is given lectures in general surgery, medicine and the specialties on the diagnosis and treatment of cancer. During the senior year the student has the privilege of attending a weekly tumor clinic at which from four to seven cases of cancer are presented. The case may be a new, undiagnosed case, one completely worked up or a follow-up case. Through the years an attempt has been made to keep the class informal. It is well attended by the house staff, residents and interns, as well as students.

For two years a three-day postgraduate clinic has been held, devoted to the study of the cancer problem. This is sponsored by the Extension Division of the University of Kansas and the Kansas Medical Society through the Committee on Control of Cancer. Our recent three-day meeting, held in January, had an attendance of over 100 members.

A recent $25,000 grant by the U.S.P.H.S. will be used to establish a Department of Oncology. It is our hope that this department will carry on cancer research and assist research efforts in other departments. Coordination of the teaching of cancer will undoubtedly be under the supervision of this department.

Prepared by Committee on Control of Cancer

89th Annual Session, May 10-13, 1948

Wichita, Kansas

Final plans are now being made for the 89th annual meeting of the Kansas Medical Society, and advance publicity from members of the Sedgwick County Medical Society, who are serving as hosts for the session, indicates that an outstanding program will be presented. Social events for the entertainment of all members are also being arranged.

GENERAL SCIENTIFIC PROGRAM

Scientific sessions will begin at nine o'clock on Tuesday morning, May 11, and will continue through Thursday afternoon, May 13. Although the complete program has been outlined, a few details remain to be verified. The exact time of each speaker's appearance and a short summary of each paper to be presented will be published in the April issue of the Journal, the annual program number. In the meantime, members of the Kansas Medical Society can study the speakers' schedule below to learn when specialists on certain subjects will be heard.

Anesthesiology—Dr. Edward B. Tuohy, Georgetown Medical Center, Washington, D. C.—Tuesday afternoon and Wednesday afternoon.

Heart Disease—Dr. A. Carlton Ernstene, Cleveland, Ohio—Tuesday morning and Tuesday afternoon.

Medicine—Dr. Henry M. Winans, Dallas, Texas—Wednesday morning and Wednesday afternoon.

Medicine—Dr. Edward H. Rynearson, Mayo Clinic, Rochester, Minnesota—Thursday morning and Thursday afternoon.

Obstetrics and Gynecology—Dr. Willis E. Brown, Iowa University, Iowa City, Iowa—Wednesday afternoon and Thursday morning.

Pediatrics—Dr. Arild E. Hansen, University of Texas School of Medicine, Galveston, Texas—Tuesday morning and Tuesday afternoon.

Psychiatry—Dr. Baldwin L. Keyes, Philadelphia, Pennsylvania—Wednesday morning and Wednesday afternoon.

Surgery—Dr. Richard K. Gilchrist, Chicago, Illinois—Thursday morning and Thursday afternoon.

Surgery—Dr. Waltman Walters, Mayo Clinic, Rochester, Minnesota—Tuesday morning and Wednesday morning.

EENT SCIENTIFIC PROGRAM

A complete program for eye, ear, nose and throat specialists will be presented on Tuesday and Wednesday, May 11 and 12, as follows:

Eye—Dr. J. H. Judd, Omaha, Nebraska—Tuesday morning, Tuesday afternoon, Wednesday morning, Wednesday afternoon.

ENT—Dr. Lawrence R. Boies, Minneapolis, Minnesota—Tuesday morning, Tuesday afternoon, Wednesday morning, Wednesday afternoon.

ROUND TABLE LUNCHEONS

There will be five round table luncheons on Tuesday as follows: Surgery, Allis; EENT, Broadview; Pediatrics, Broadview; Heart, Lassen; Anesthesiology, Lassen.

All groups will be together for a combined round table luncheon on Wednesday, and three separate groups will meet on Thursday. The surgical group will meet at the Allis, those interested in medicine will meet at the Broadview, and those interested in obstetrics and gynecology will lunch at the Lassen.

GOLF AND MARKSMANSHIP TOURNEY

As usual, on the day preceding the scientific session, there will be a golf tournament and marksmanship tourney. Preliminary rounds and trials will start at ten o'clock Monday morning, and competitive matches are scheduled for one o'clock. A tournament dinner will be served that evening at the Broadview hotel. Golfing will be at the Meadowlark Golf club, at the corner of Harry and Oliver streets, and the shoot will be at the Ark Valley Gun club, across from Cessna Aircraft.

SOCIAL EVENTS

The big social event of the session, the annual banquet, will be held Wednesday evening on the Broadview roof. An entertaining program is being planned and a dance will follow.

On Tuesday evening there will be the usual stag party, at a place to be announced, and on the same evening there will be a special party for women physicians.

HOTEL RESERVATIONS

Each member who wishes to attend the 89th annual session will be responsible for his own hotel reservations. Those who have not already made arrangements for accommodations are urged to do so immediately. Among the hotels in Wichita are the following: Allis, Broadview, Commodore, Eaton, Hamilton, Lassen, McClellan, Shirkmere and Skaer.

COMMITTEE CHAIRMEN

The following Sedgwick county physicians are serving as chairmen of the various committees:

General Chairman—Dr. A. L. Ashmore
Program—Dr. George F. Gsell
Arrangements—Dr. A. E. Hiebert
Commercial Exhibits—Dr. George E. Milbank
Reception—Dr. J. P. Berger
Publicity—Dr. Louis A. Donnell
Scientific Exhibits—Dr. Harry O. Anderson
Woman's Auxiliary—Dr. Donald P. Trees
Housing—Dr. Bruce P. Meeker
Entertainment—Dr. Clyde W. Miller

PRESIDENT'S PAGE

To the Members of the Kansas Medical Society:

It is a pleasure for the Kansas Medical Society to extend greetings to the new dean of the School of Medicine, Dr. Franklin D. Murphy, and to wish him a full measure of success in his new assignment. It is an added pleasure to express gratitude and admiration to Dr. H. R. Wahl, who for more than 20 years has guided its destinies and brought it to its present high place in the field of medical education.

The gift from Dr. Bell and the Legislative Act of 1907 initiated the program of medical education in our state. Since that time many changes have been made, standards have been altered, old methods have been discarded to be replaced by more modern procedures. Constant progress and improvement have marked each and all of these changes. With full recognition of these facts and in a spirit of helpfulness and after much discussion with many interested Kansas doctors, we make a few suggestions for further improvement.

There are two physical problems crying for immediate solution. The first is to arrange all of the teaching facilities on the one location at Kansas City. This necessitates the erection of a new, especially designed, large building to house the preclinical year and a half now at Lawrence, as well as the pathological and research divisions still housed on Southwest boulevard. The second is the great need for more hospital beds to supply clinical material for teaching the number of students which must be accepted annually to supply the need for doctors.

Members of the faculty at present are men of high caliber and are poorly paid. It is evident by glancing at Table VIII on page 114 in this issue, that they would not be teaching if they looked upon financial gain as the only acceptable payment for their work. They must believe that "To keep a thing one must give it," and derive personal satisfaction in the care of the indigent and teaching prospective practitioners.

There are but three evident sources from which these large sums of money can come. The first of these in importance is the Legislature of the state of Kansas, which should have full credit for its understanding help in the past. The members of our profession should endeavor to acquaint prospective legislators with our needs so that they may be familiar with the facts. The torch of learning has always been held high in Kansas; let us not through negligence allow it to become dim. If appropriations are inadequate, the work of the medical school will suffer proportionately, if they are generous, the school will continue to progress. Members of the medical profession should proudly use the weight of their political influence to help the university secure the funds it so urgently needs. The second is Federal grants in aid which can only come if we do our full share in Kansas. The third is through contributions from individuals and institutions. It is hoped that we may soon initiate a long range program of contributions from as many sources as possible for the establishment of an endowment fund for our medical school.

The Kansas Medical Society looks upon the Medical School of Kansas as the fountain head of medical practice in this whole area. It cherishes the continuance of our pleasant relationship and pledges full cooperation to the School of Medicine and the new dean.

L. S. Nelson

President.

EDITORIALS

New Dean at Medical School

Dr. Franklin D. Murphy, 32, has been appointed dean of the University of Kansas School of Medicine to succeed Dr. H. R. Wahl, who is retiring after having served in that position for almost 25 years. Dr. Murphy will devote full time to the school after April 1, and will officially take over his duties as dean on July 1. Dr. Wahl will continue as head of the Department of Pathology and Bacteriology.

Dr. Franklin D. Murphy

Dr. Murphy is the son of the late Dr. Franklin E. Murphy, who had practiced medicine for nearly 30 years prior to his death in 1932 and had been clinical professor of medicine in the School of Medicine since its foundation.

The new dean was graduated from the University of Kansas with an A.B. degree in 1936, and then spent a year in Germany as an exchange scholar at the University of Goettingen, studying physiology under Dr. Hermann Rein. Upon his return to this country, he entered the University of Pennsylvania School of Medicine and received his M.D. in 1941. Successively, he was intern, resident and fellow in internal medicine at the hospital of the University of Pennsylvania.

In 1944 he entered the United States Army and was stationed for the greater part of the war in Memphis, attached to an army research project in tropical diseases. After separation from the army, he became associated with the University of Kansas School of Medicine in the Department of Internal Medicine. While serving as dean, he will also be an associate professor of medicine.

Dr. Murphy is a member of Beta Theta Pi, Nu Sigma Nu, Alpha Omega Alpha, Sigma Xi, and the American Federation for Clinical Research, and he is an associate of the American College of Physicians.

Dr. Wahl had announced several years ago that he wished to retire and would do so whenever a successor was appointed. He has served the university loyally and selflessly, and is entirely deserving of the many expressions of appreciation he is now receiving. His many friends in the medical profession are happy to note that he will continue to be associated with the School of Medicine.

Dr. Murphy is well prepared for his new duties and assumes the responsibilities of the administrator's post with the good wishes of the Kansas Medical Society and its individual members.

Second Annual University Number

With this issue the Journal of the Kansas Medical Society publishes its Second Annual University of Kansas School of Medicine number. The plan to print a special university issue was conceived last year, and the Journal's first complete number in tribute to the medical school was published in March of 1947. This issue, March, 1948, is likewise dedicated to the university in recognition of its many services to the medical profession.

Credit for the fine scientific and editorial material in this issue goes to Dr. James B. Weaver, chief of the Orthopedic Section at the University of Kansas School of Medicine and an associate editor of the Journal. When Dr. Weaver accepted an appointment as associate editor last spring, he also accepted responsibility for the University of Kansas issue. Several months ago he began work on the issue, arranging for scientific papers and gathering data for the editorial, "The University of Kansas Medical Center." This editorial answers many questions about the facilities and services of the medical center, outlines the physical plant, discusses enrollment in the medical school, patients cared for during the course of the past year, the number of faculty members and employees, and the salaries and stipends of instructors. The interesting tables accompanying the editorial give valuable statistical information.

The Editorial Board welcomes the opportunity of publishing this Second Annual University of Kansas School of Medicine issue and extends its most sincere thanks to Dr. Weaver for his splendid work.

The University of Kansas Medical Center

The University of Kansas Medical Center is composed of the University of Kansas Hospitals and the last two and one-half years of the University of Kansas Medical School and is located in Kansas City. The first year and one-half of the medical school still functions on the university campus at Lawrence. The Kansas City facilities are on two campuses about one and one-half miles apart. The three antiquated, inadequate and unsuitable buildings of the old medical school on the Rosedale campus overlooking Southwest boulevard are still in use. Housed

here, in unkempt and depressing surroundings, are the pathology and pharmacology departments and the psychiatric and pulmonary tuberculosis wards.

The main campus at 39th and Rainbow boulevard covers four square blocks and on it are situated nine buildings. The administration building, B ward building, children's pavilion, out-patient building, Eaton ward, and the connecting corridor are used for patients or services thereto. Hixon laboratory for research, Hinch hall (nurses' home), power plant and warehouse do not house patients. Two of these buildings, Hixon laboratory and the children's pavilion, were gifts to the medical school.

Thus, the University of Kansas Medical School is located on three different sites in two different cities. It has been common knowledge for many years that the divided medical school is less efficient and more costly than the unit school. Medical educators have repeatedly condemned the divided school, yet the state of Kansas has made no great effort to correct this basic fault and maintains one of the two schools in the United States still functioning in this manner.

Despite handicaps, the medical center has accomplished much, and the following tables and comments are intended as a statistical and factual report. Table I indicates the number of graduates of the medical school since its beginning in 1907 and their present distribution in Kansas, and it should be noted that 480 graduates or 25 per cent of *all* graduates are *now* practicing in Kansas. This number does not include those graduates who practiced in Kansas and are now deceased. This figure is not available but should bring the total to well above 500. The 480 graduates now practicing in Kansas constitute over 30 per cent of the membership of the Kansas Medical Society.

TABLE I

NUMBER OF GRADUATES FROM THE UNIVERSITY OF KANSAS MEDICAL SCHOOL SINCE 1907 AND THEIR DISTRIBUTION IN KANSAS AND MISSOURI

1. Total number of graduates from the Medical School	1,910
2. Number of graduates now in Kansas	480
3. Per cent of graduates now in Kansas	25
4. Number of graduates now in Missouri	245
a. In Kansas City, Missouri	176
b. Out state	69
5. Per cent of graduates now in Missouri	13

Table II concerns the student enrollment in the medical school. While the training of medical students is the chief function of the medical school, it will be seen the scope is much broader. In addition, doctors are trained in the various specialties and technicians are trained in the numerous allied sciences. There is a grand total of 516 students, not a small student body, which completely swamps the present facilities. Table III lists the assignments of the resident group. Practically all of these men are in training to qualify for the various national board examinations in their chosen specialties.

TABLE II

ENROLLMENT

Medical Students:	*Men*	*Women*	*Total*
Freshmen	82	4	86
Sophomores	76	9	85
Juniors	75	8	83
Seniors	51	5	56
Total			310
Nursing School			87
Residents			44
Interns			13
Other Enrollment:			
Occupational Therapists			9
Physical Therapists			15
Medical Technicians			15
X-ray Technicians			4
Dietitians			4
Applied Basic Science Students			9
Post Graduate Specials			3
Graduate Students			3
Note: If a resident is taking graduate work, he is counted only once.			
Total Enrollment			516

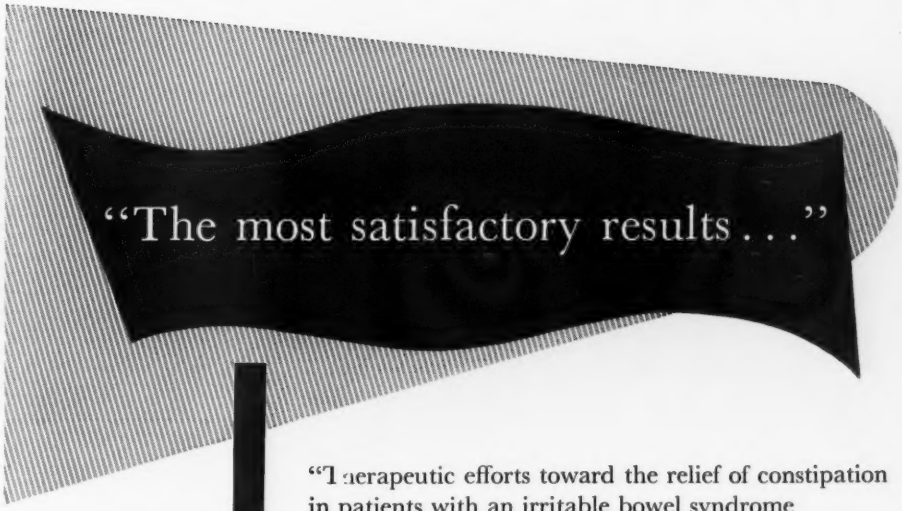
The geographical source of the medical students and the number of applicants for admission in each class is shown in Table IV. The senior and junior classes have a relatively high percentage of out of state residents. This is due to the assignment of these students to the medical school by the Army and Navy during the war years. Naturally, these students remained after the war years to complete their studies. The sophomore and freshman classes are back on a pre-war basis following the withdrawal of the Army and Navy programs.

Table IV also shows that the number of appli-

TABLE III

SERVICE ASSIGNMENTS OF THE RESIDENTS

Anesthesia	3	Ophthalmology	3
Dermatology	1	Pathology	6
Neurosurgery	1	Pediatrics	5
Medicine	8	Plastic Surgery	1
Ear, Nose and Throat	2	Roentgenology	2
Obstetrics and Gynecology	5	Surgery	4
Orthopedic Surgery	2	Urology	1
Total number of residents			44



IRRITABLE BOWEL SYNDROME

"Therapeutic efforts toward the relief of constipation in patients with an irritable bowel syndrome must be continued over prolonged periods of time. Cathartics which exert their action by direct irrigation of the intestinal mucosa have no place in long-term bowel management. . . . The most satisfactory results were obtained with a hydrophilic mucilloid [Metamucil] prepared from psyllium seed. . . ."*

METAMUCIL

When prolonged treatment is indicated, Metamucil—the "smoothage" management of constipation—fits well into the program.

Smooth, gentle, normal evacuation—the desired action in the irritable bowel syndrome—is afforded by the use of Metamucil.

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*Dolkart, R. E.; Dentler, M., and Barrow, L. L.: The Effect of Various Types of Therapy in the Management of the Irritable Bowel Syndrome, Illinois M. J. *90*:287 (Nov.) 1946.

SEARLE | RESEARCH IN THE SERVICE OF MEDICINE

TABLE IV

RESIDENCES OF MEDICAL STUDENTS, 1947-1948

SENIORS:	
Total applications received	236
Students in medical school:	
Kansas	41
Iran	1
Massachusetts	1
Illinois	1
South Carolina	1
Kansas City, Missouri	5
California	1
Ohio	1
Pennsylvania	1
Oklahoma	1
Utah	1
Missouri	1
Total Kansas students	41
Total out of state students	15
SOPHOMORES:	
Total applications received	263
Students in medical school:	
Kansas	77
Iran	1
Kansas City, Missouri	6
Maryland	1
Total Kansas students	77
Total out of state students	8
JUNIORS:	
Total applications received	176
Students in medical school:	
Kansas	62
Colorado	1
Michigan	2
Kansas City, Missouri	5
Ohio	1
Pennsylvania	2
Washington	1
California	3
New York	4
Arkansas	1
Maine	1
Total Kansas students	62
Total out of state students	21
FRESHMEN:	
Total applications received	213
Students in medical school:	
Kansas	78
Kansas City, Missouri	6
Puerto Rico	1
Illinois	1
Total Kansas students	78
Total out of state students	8

cants for admission in comparison to those selected is in the ratio of about three to one. It should be stated that no blanks for admission are sent out to residents of any state other than Kansas, with the exception of residents of Kansas City, Missouri. An indication of the number of applications which might be received can be seen in the fact that the registrar in the Kansas City division receives approximately 100 requests per month, and to those persons a statement of reason for refusal is sent. Certainly the secretary at the Lawrence division also receives requests. It may also be stated that no Kansas student has been denied admission who was able to meet the high scholastic and other requirements for entrance.

In order to meet the demands in medical education and allow every young man in the state of Kansas who wishes to enter medicine and who has adequate scholastic standing to do so, the faculty of the medical school has decided to divide the year into four quarters. This would place three-fourths of the total number of students in the junior and senior years in school at a given time and would allow the other one-fourth to be working as externs in various approved hospitals. This plan has the distinct advantages of offering valued experience to medical students and relieving the shortage of interns existing today. In addition, it would help materially in handling the overload of students which would otherwise result.

The accomplishments of the hospital section of the medical center for the year 1947 are depicted in Table V. The hospital is a 373-bed institution which admitted a total of 9,384 patients for a total of 125,480 patient days or an average daily census of 343 patients. There were over 50,000 visits to the out-patient department.

Private patients are those patients occupying private rooms and paying hospital and professional fees. Semi-private patients are those patients occupying ward beds and paying hospital and professional fees. Clinical patients are those patients occupying ward beds and paying reduced hospital fees but no professional fees. County patients are those sent in by county authorities for whom a reduced hospital fee is paid by the county, but no professional fee is paid. Free patients are those whose hospital fees are paid from the medical school free teaching fund. There is no professional fee, and patients are selected chiefly because of their value as teaching cases. The newborns are also considered as free cases. Obstetrical patients are charged a flat rate for hospital care. This includes care of the infant, for whom no professional fee is charged.

Thus, a little over 50 per cent of all admissions pay no professional fee. However, all patients, regardless of classification or whether or not they pay a professional fee, are, with the exception of the obstetrical department and rare individual cases, used for teaching purposes and are observed through their hospital stay by medical students. As a matter of fact, the medical school would be even more woefully lacking in teaching material if private and semi-private patients were not available for this

The First Modern Practitioner

Medicine and Dentistry were rescued from stagnant *generalizations* about disease by the English Puritan, Thomas Sydenham (1624-1689)—just as his ex-pirate assistant, Tom Dover, rescued Robinson Crusoe (Alexander Selkirk).

Sydenham first *observed and described specific and distinct diseases:* scarlet fever, measles, gout, malaria, dysentery, etc. With cool drinks for the smallpox victim, iron for anemia or sedatives for needed rest, he ended a war on *symptoms* and allied the profession with nature—to help the body *heal itself!*

So there were more good doctors in the next century. But the British Common Bench ruled in 1767 that neither their eminence nor good motives were sufficient defense against charges of malpractice or negligence; that a patient yielded no rights in submitting to treatment; that definitions of "skill" and "due care" varied with circumstance.

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TABLE V

January 1, 1947, to December 31, 1947, inclusive

Admitted to Hospital:		*Patient Days*		
	Patients	*Male*	*Female*	*Total*
Surgery	935	5,615	5,985	11,600
Plastic Surgery	258	2,850	1,391	4,241
Neurosurgery	279	2,501	1,307	3,808
X-ray	112	755	2,140	2,895
Medicine	1,398	9,346	11,771	21,117
Neurology	74	709	1,083	1,792
Psychiatry	194	2,847	4,457	7,304
Pediatrics	827	3,933	4,933	8,866
Ophthalmology	410	3,478	2,128	5,606
Ear, Nose & Throat	890	1,556	1,149	2,705
Orthopaedics	500	4,053	4,189	8,242
Urology	438	5,440	762	6,202
Dermatology	122	1,211	483	1,694
Tuberculosis	61	3,710	6,393	10,103
Administrative	107	122	653	775
Dental	43	142	39	181
Newborn	986	5,077	5,439	10,516
Gynecology	590	.....	7,307	7,307
Obstetrics	1,160	.....	10,517	10,517
Total	9,384	53,345	72,126	125,471

Births	986
Deaths	356
Autopsies	244
X-ray plates	41,235
Patients in x-ray	36,229
Radiographic patients	20,018
X-ray treatments, deep	9,078
X-ray treatments, superficial	1,336
X-ray observations	4,200
Radium treatments	169
Fluoroscopies	5,059
Electrocardiograms	2,110
Patients in physical therapy	2,165
Treatments in physical therapy	21,731
Operations, major	1,755
Operations, minor	2,901
Tissue pathology	5,196
Laboratory examinations	265,223
Dispensary patients, old visits	43,054
Dispensary patients, new visits	9,961

CLASSIFICATION OF PATIENTS

Private	516
Semiprivate	4,362
Clinical	2,303
County	794
Free	173
Newborn	986
Crippled Children	216
Student Health	22
State	12
Total	9,384
Colored patients	1,818
White patient days	105,053
Colored patient days	20,427
Children	1,699
Adults	7,685
Total	9,384

purpose. Objections on the part of patients are exceedingly rare and occur so infrequently as to be negligible.

The source of clinical material is of interest. A total of 794 county patients was received from 84 of the 105 counties in the state. This number is probably a small percentage of the total number of county cases in the state. Many counties care for their own, and in others the question of distance or the prompt hospitalization of the patient makes local hospitalization more feasible. A greater number of county patients, particularly diagnostic problems and those requiring special treatment not available locally, is desired by the medical center. Patients requiring institutional care are, to a large extent, not desirable. These patients tie up beds that might be occupied by patients for whom something can be done and who are teaching material. An institution for these unfortunates is much needed.

Table VI lists the 10 counties which constitute the source of the bulk of the county patients. Listed, also, are the free and clinical patients from these

TABLE VI

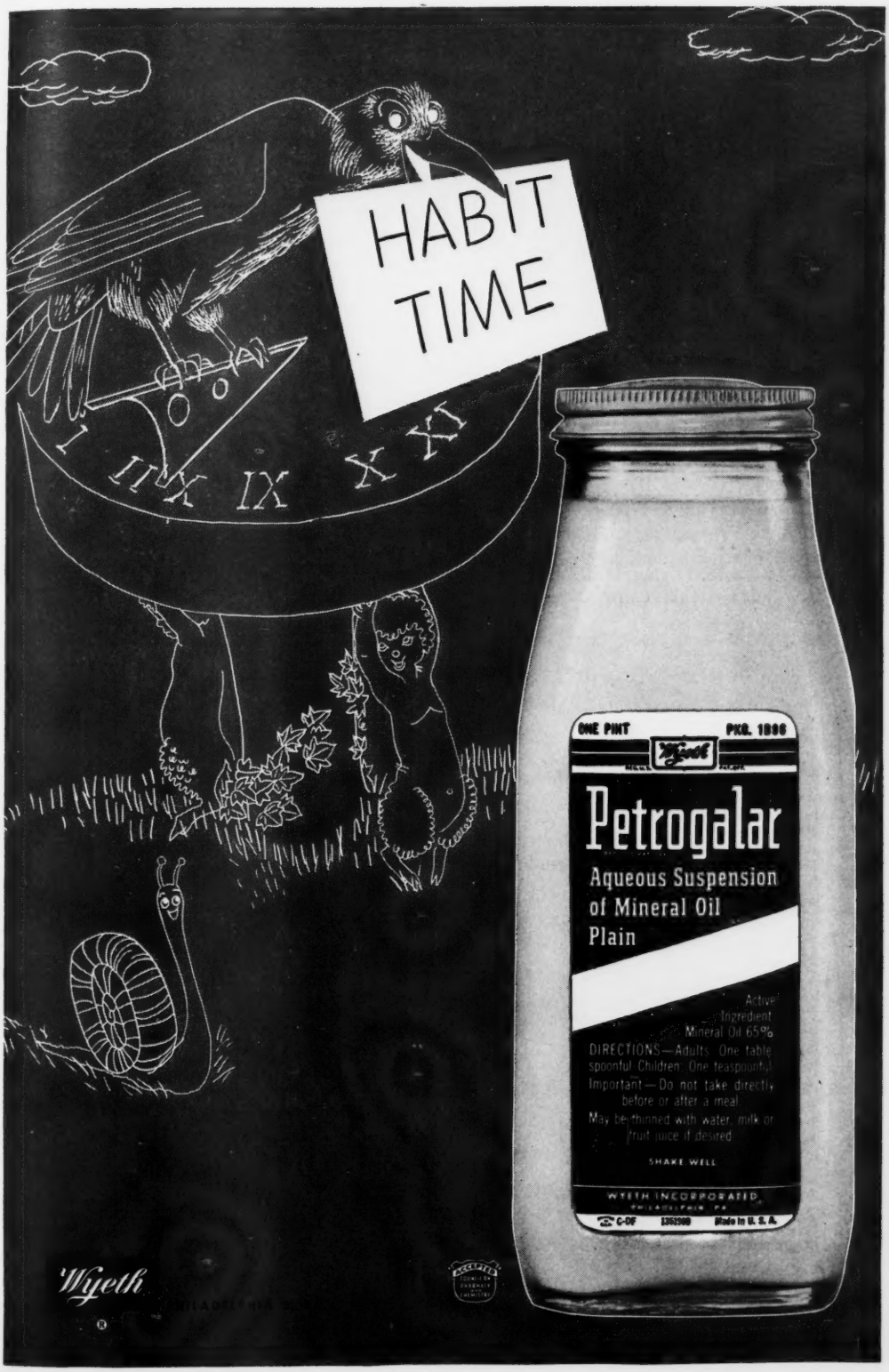
SOURCE OF PATIENTS

	County	*Free*	*Clinical*
Wyandotte	88	114	949
Johnson	59	4	65
Montgomery	38	0	11
Linn	32	0	11
Miami	23	0	24
Marshall	21	0	7
Osage	20	3	13
Leavenworth	18	1	28
Kansas City, Mo.	3	37	598
Out state Mo.	10	0	179

counties, and this is compared to the same type of patients admitted from Kansas City, Missouri, and out-state Missouri. Wyandotte county, due to its location in close proximity to the medical center and the fact that it has the largest population of any county in the state, is naturally the chief beneficiary of the free and clinical services. Kansas City, Missouri, due to location and large population, is a valuable source of clinical material but not as rich a source as the Kansas counties adjacent to the school.

The medical center has many activities other than those already mentioned, such as research (both medical and allied sciences), refresher courses, advisory groups, surveys and so forth. These many activities, plus the maintenance of the physical plant, require a large personnel. The faculty and school of medicine employees total 233. This figure embraces both the Lawrence and Kansas City divisions. There are 673 hospital employees, all in Kansas City, a grand total of 906 for the hospital and medical school.

Table VII lists pertinent information relative to the faculty of the entire medical school. Of interest is the fact that 43 per cent of the faculty members are Kansas university graduates. Only 20 are full time employees and the bulk of these are in the Lawrence division and teach the non-clinical sci-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ences. Besides these full time instructors, there are 33 half-time instructors. These latter are, for the most part, heads of departments or sections, directors of clinics and so forth. The 53 are paid a salary commensurate with the salary scale of the faculty of the University of Kansas. The remaining 147 faculty members are on a yearly stipend ranging from nothing to $300 yearly (less withholding tax). Table VIII shows the number of those on "token" salaries of $300 or less, in the various levels of rank. A few senior faculty members of professional rank either refuse the "token" stipend or turn over the check to their particular departments. Attention is directed to the fact that the bulk of these "token" payments goes to junior faculty members, that is young physicians just starting or in the early years of practice. Many of these men spend long hours in teaching or caring for non-pay patients. Twenty or more years ago there was some basis for this method of procedure, as the young man needed this experience and considered it part of his training. Today, some physicians are starting practice after three to seven years as residents with a diploma from their national board. They are ready for private practice and, after the long years of costly professional training, are very much needing the same to provide the necessities of life. The University of Kansas Medical School cannot compete with private clinics for these men in the realm of financial inducements, and neither can the school offer hospital facilities so that a livelihood may be made from a private practice. A hospital of 373 beds, over half occupied by non-pay patients, cannot possibly offer beds to a staff of over 150 practicing physicians.

TABLE VII

Number of Doctors on the Faculty	
a. Full time	20
b. Part time	180
Of the 200 on the faculty:	
a. 87 have M.D.'s from Kansas University	
b. 113 have M.D.'s or Ph.D.'s from other schools	
c. 93 live in Kansas (Kansas City, Ks., and nearby)	
d. 78 live in Kansas City, Missouri	
e. 29 live elsewhere in Kansas	
f. 33 are full professors	
g. 16 are associate professors	
h. 27 are assistant professors	
i. 36 are associates	
j. 43 are instructors	
k. 29 are assistants	
l. 16 are lecturers	

TABLE VIII

1. Professors		33
	Paid $300	7
	Paid $100	2
	No salary	4
	Total	13
2. Associate Professors		16
	Paid $300	9
	Paid $100	2
	No salary	0
	Total	11
3. Assistant Professors		27
	Paid $300	8
	Paid $100	9
	No salary	0
	Total	17
4. Associates		36
	Paid $300	10
	Paid $100	20
	No salary	1
	Total	31
5. Instructors		43
	Paid $300	9
	Paid $100	22
	No salary	8
	Total	39
6. Assistants		29
	Paid $300	1
	Paid $100	10
	No salary	9
	Total	20
7. Lecturers		16
	Paid $300	1
	Paid $100	0
	No salary	15
	Total	16
8. Grand totals		
	Paid $300	45
	Paid $100	65
	No salary	37
	Total	147

As it now stands, 10 per cent of the faculty of the medical school are teaching as a vocation. Ninety per cent are teaching or practicing in the medical center as an avocation. The old adage that one cannot serve two masters is considered to have merit. Would it not be more efficient if the bulk of the faculty members spent their full time working within the confines of the medical center and received their entire remuneration from the state? More and more medical schools are coming to this conclusion.

The Univerity of Kansas Medical Center has many problems to be solved. A few of the more pertinent of these problems have been indicated in the preceding paragraphs. These problems are the concern not only of the staff of the medical center but also of the state as a whole and Kansas physicians in particular.

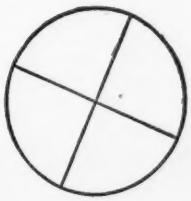
Obstetrical and Gynecological Examinations

General oral and pathology examinations (Part II) for candidates for the American Board of Obstetrics and Gynecology, Inc., will be conducted in Washington, D.C., May 16-22, inclusive. Notice of the exact time of each candidate's examination will be sent him several weeks in advance of the examination dates. Candidates applying for re-examination in Part II must make written application to the secretary's office not later than April 1, 1948.

The Board is now receiving applications for the 1949 examinations, and will continue to do so until November 1, 1948.

The secretary of the board is Dr. Paul Titus, 1015 Highland building, Pittsburgh 6, Pennsylvania.

For medically sound reduction of overweight...



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BENZEDRINE SULFATE, by safely depressing the overweight patient's appetite, ordinarily curbs excessive eating. Lowered caloric intake and loss of weight naturally follow. Hence, Benzedrine Sulfate therapy is medically sound and highly effective.

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[1]Harris, S. C.; Ivy, A. C., and Searle, L. M.: THE MECHANISM OF AMPHETAMINE-INDUCED LOSS OF WEIGHT: A Consideration of the Theory of Hunger and Appetite, J.A.M.A. 134:1468 (Aug. 23) 1947.

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COUNTY SOCIETIES

The Cherokee County Medical Society met January 20 at the office of Dr. Grant Powell, Galena. Dr. Leon Bauman, head of the Labette county health department, was guest speaker.

* * *

The regular meeting of the Wilson county society was held January 14 at Fredonia. The group had dinner with members of the Auxiliary, and then held a business session at the office of Dr. E. C. Duncan. The following officers were elected: president, Dr. Raymond J. Beal; vice president, Dr. A. Mary Hayden; secretary, Dr. E. C. Duncan.

* * *

Dr. S. D. E. Woods, Osawatomie, was named president of the Miami county society at a meeting held at Paola January 16. Dr. William Brown, Paola, was elected vice president and Dr. Joseph Fowler, Osawatomie, was chosen secretary.

* * *

Members of the Marion county society met February 4 at Marion. Dr. G. J. Goodsheller showed Kodachromes of his recent trip to the east coast, and Dr. Charles Magee showed pictures taken in India while in military service.

* * *

The Sedgwick County Medical Society entertained the Wichita Dental Society, the Sedgwick County Medical Assistants' Society and the Wichita Dental Assistants' Society at a meeting at the Broadview hotel February 17, Mr. Mac F. Cahal of Chicago, executive secretary of the American College of Radiology, was guest speaker. Mr. Cahal was the first executive secretary of the Sedgwick County Medical Society.

* * *

Members of the Crawford County Auxiliary were guests of the county medical society at a dinner meeting held February 26. Also present from Topeka were Dr. J. L. Lattimore and Mr. Oliver Ebel, and Dr. Lattimore presented a scientific paper, "Nonspecific Serological Reagins."

* * *

The Riley County Society held a dinner meeting February 24 at Manhattan. Dr. Morris Fishbein, editor of the Journal of the A.M.A., who was in Manhattan to give a lecture at Kansas State College, was a special guest.

Directory Information Requested

More than 115,000 physicians in the United States have returned to the American Medical Association the directory information cards mailed out last November, but many others have failed to do so. The A.M.A. requests the cooperation of all so that accurate, up-to-date data can be assembled. A second request for information and a duplicate card will be mailed soon to those who have not yet replied.

Each physician is urged to use only the card addressed to him, as it bears the serial number assigned to him. Cards addressed to other physicians who have moved away should be returned to the A.M.A. with the doctor's new address.

To avoid confusion in recording data, the A.M.A. explains several items that have not been clear. Physicians are urged to check only one specialty on the back of the card and to indicate whether their practice is limited to that specialty or whether special attention is given to that specialty along with the practice of general medicine. The lines marked "Intern" and "Resident" are to be filled in only if the physician is now serving an internship or residency.

After checking information cards returned to its office, the A.M.A. reports that many are not aware of the difference between "Membership" and "Fellowship" in the American Medical Association. Here are the official definitions:

Every member in good standing in the constituent medical association of the state in which he is engaged in practice whose name is officially reported to the secretary of the A.M.A. for enrollment becomes automatically a member of the A.M.A. As such, he is not called upon to pay any dues or to contribute financially to the association, but he is eligible to apply for fellowship.

To qualify as a fellow, a member in good standing is required to make formal application for fellowship, to pay fellowship dues and to subscribe to the Journal of the A.M.A. Applications must be approved by the Judicial Council. Fellowship dues and subscription to the Journal are both included in one annual payment of $12, which is the cost of the Journal to subscribers who are not fellows.

Each fellow receives a fellowship card as payment of his dues is recorded, which card is presented for admission to annual meetings of the association. Physicians eligible for fellowship should make formal application now so that they may attend the annual meeting in Chicago in June.

First International Poliomyelitis Conference

Ten world medical and research authorities on poliomyelitis were recently named presiding officers for plenary sessions of the First International Poliomyelitis Conference to be held in New York City July 12-17. Each of the presiding officers will be assisted by a panel composed of international authorities who have done special work on particular phases of the problem. Papers will be presented at each session and will be followed by open discussions.

Presiding officers are: Oswaldo P. Campos, M.D., clinical orthopedic surgeon, Hospital Jesue, Rio de Janeiro, Brazil; Rustin McIntosh, M.D., professor of pediatrics, Columbia university, New York City; Arthur Steindler, M.D., professor of orthopedic surgery, University of Iowa, Iowa City; Arvid Wallgren, M.D., professor of pediatrics, Royal Caroline Medical Institute, Stockholm, Sweden; Carlos S. Ottolenghi, M.D., Docente Libre de Orthopedia, Buenos Aires, Argentina; James E. Paullin, M.D., professor of clinical medicine, Emory University, Atlanta, Georgia; Pierre L. LePine, M.D., director of laboratories, Pasteur Institute, Paris, France; Harry S. Mustard, M.D., Commissioner of Health, New York City; Thomas Parran, M.D., Surgeon General, U. S. Public Health Service; Irvin Abell, M.D., clinical professor emeritus of surgery, University of Louisville, Louisville, Kentucky.

Summaries of polio problems in other countries will be presented by official delegates who have been invited to represent their governments. Invitations have been extended to more than 60 nations through the state department.

Delegates will be divided into three categories, official government delegates; institutional delegates representing invited universities, societies and scientific and philanthropic organizations interested in research and treatment of virus diseases; and member delegates. The last group will include physicians and other scientific and professional persons qualified by recognized standards.

another of its several advantages:

FURACIN SOLUBLE DRESSING *has proven effective* in reducing the mixed infections of wounds and burns. Prior to treatment, Snyder et al.* found heavy growth in the majority of swab-cultures from 19 war wounds and burns. Following institution of Furacin Soluble Dressing therapy, the majority of cultures became sterile; only 4 per cent continued to show heavy growth.

Indications:

Infected surface wounds, or for the prevention of such infection
Infections of second and third degree burns
Carbuncles and abscesses after surgical intervention
Infected varicose ulcers
Infected superficial ulcers of diabetics
Impetigo of infants and adults
Treatment of skin-graft sites
Osteomyelitis associated with compound fracture
Secondary infections following dermatophytoses

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NORWICH, NEW YORK

*Snyder, M. L., Kiehn, C. L. & Christopherson, J. W., Mil. Surg. 97:380, 1945.

LITERATURE ON REQUEST

MEMBERS

Dr. W. G. Cauble, formerly of Winfield, announces the opening of an office in Wichita for the practice of general surgery.

* * *

Dr. Fred G. Dietrich, Lakin, has been named Kearny county health officer.

* * *

Dr. Ernest Carreau, Wichita, who has been spending afternoons at an office in Mulvane, announces the closing of the Mulvane office.

* * *

Dr. G. R. Dean, who began practice in McPherson county in 1895, announces his retirement from active practice although he will continue as county health officer and as a member of the Kansas State Board of Medical Registration and Examination. His practice in McPherson will be taken over by Dr. Weir Pierson, who has been with him for the past year.

* * *

Dr. J. R. Henning has completed a course in EENT work at the University of Kansas Medical Center and is now associated with his brothers, Dr. C. W. Henning and Dr. E. E. Henning, in practice in Ottawa.

* * *

Dr. and Mrs. F. R. Croson, Clay Center, will leave soon on a vacation trip to South America. In May they will attend the Rotary International meeting in Rio de Janeiro.

* * *

Dr. L. D. Mills, Mound City, has been appointed Linn county health officer.

* * *

Dr. Ralph I. Canuteson, director of health service at the University of Kansas, is the author of a paper, "Health Service in the College Program," printed in the November, 1947, issue of Journal-Lancet. The paper was a copy of an address Dr. Canuteson gave last May upon completion of his third year as president of the American Student Health association.

* * *

Dr. I. J. Waxse has discontinued management of the Oswego hospital and has established an office there.

* * *

Dr. P. S. Combs, Leavenworth, was recently appointed county health officer.

Army Tests New Drug

The United States Army Medical Department soon will stage the most extensive test yet made of the efficacy of chloromycetin, the only drug thus far discovered which is as effective against certain rickettsial disease-causing organisms as the sulfa drugs and penicillin are effective against bacteria. The test will be made in an effort to stop the spread of scrub typhus in the Far Eeast.

Dr. J. E. Smadel, director of virus research at the Army Medical Center, and one of the discoverers of this substance, plans to fly to the Malay states early this spring with a supply of the drug for the treatment of native plantation workers among whom scrub typhus is making serious inroads.

The carrier of the infection is a mite which is probably spread by rodents. During the war many of the plantations in Malaya were allowed to go back to brush, and this resulted in a big population of infested rodents. Workers sent in to clear the plantations have suffered a heavy mortality rate.

Scrub typhus was a major army problem in the Pacific during the war, and the story of its ravages is dramatic. Efforts to produce a vaccine against it cost the lives of three American and several British workers, and nothing was accomplished until the war was nearly over. An apparently effective vaccine finally was prepared from the macerated lungs and spleens of infected rodents, but when this was given actual field tests it was found to be ineffective.

The outlook for the new drug is promising, but no predictions are made. Experience has shown that laboratory results do not always work out in the field, so Dr. Smadel will conduct his tests where results can be definitely established.

Preventive Medicine Interim Board

Announcement has been made of the formation of an "Interim Board" of Preventive Medicine, the first step toward professional recognition of consultants and practitioners of preventive medicine as medical specialists. Announcement of the Interim Board was made jointly by the surgeons general of the Army, Navy and United States Public Health Service.

The board was formed chiefly for the purpose of setting up certification requirements for medical officers seeking to qualify as specialists. The cooperative efforts of these three services will give impetus to a plan for creation of an American Board of Preventive Medicine and Public Health to take its place among the 16 medical specialty boards already in existence. Six civilian authorities on the specialty were chosen to serve on the interim board, and Dr. Ernest L. Stebbins, director of the Johns Hopkins School of Hygiene and Public Health, will serve as chairman.

DEATH NOTICES

SCHUYLER NICHOLS, M.D.

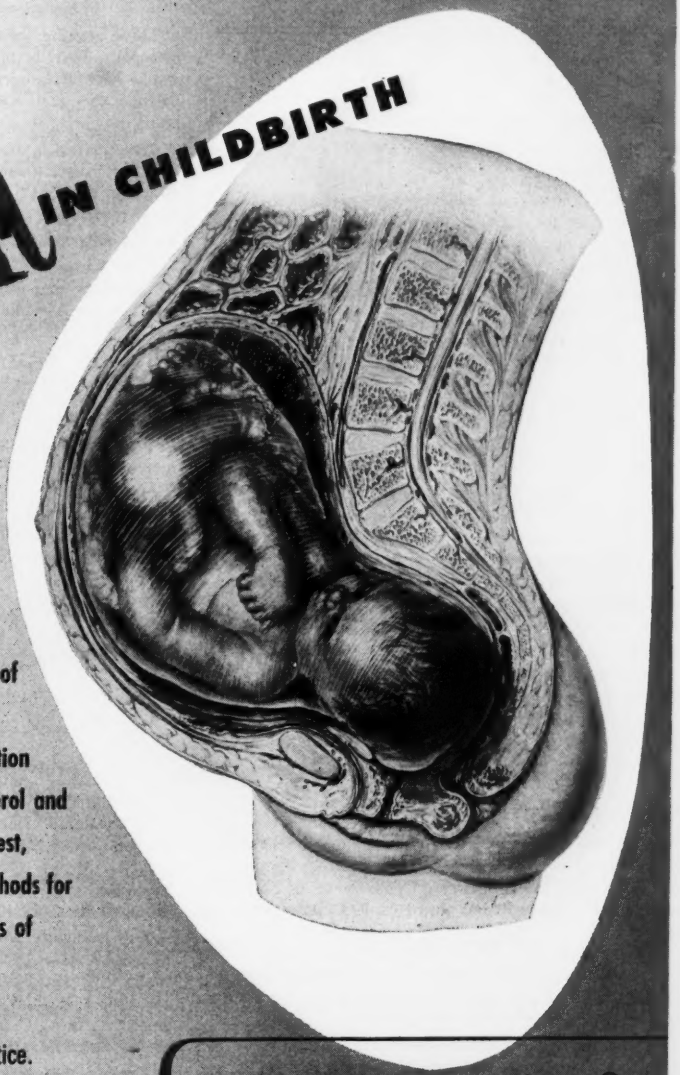
Dr. Schuyler Nichols, 72, who had been practicing in Herington for many years, died January 25 as the result of injuries received in an automobile accident. Mrs. Nichols, who was riding with him at the time of the accident, was also killed. Dr. Nichols was graduated from Barnes Medical College, St. Louis, in 1901, and received his license to practice in Kansas the same year. He was an active member of the Dickinson County Medical Society.

* * *

SAMUEL THOMAS MILLARD, M.D.

Dr. Samuel T. Millard, 71, Topeka physician for many years, died February 6 after several months illness. After his graduation from Kansas Medical College in 1906, he practiced in Carbondale for a short time before opening his office in Topeka, specializing in dermatology. During World War I he served in the Army medical corps and was overseas for two years. He was instrumental in the founding of the city-county clinic in Topeka 20 years ago and was active in work there until his recent illness. In addition to his medical interests, he had many hobbies, collecting woods and glassware, building ship models, painting, collecting first and early edition books, and writing books on antique glassware.

Pain IN CHILDBIRTH



One of the Simplest, Safest and Most Satisfactory Methods

Careful consideration of all the methods advocated for the relief of pain during childbirth leads to the conclusion that local infiltration anesthesia combined with Demerol and scopolamine is one of the simplest, safest and most satisfactory methods for the average woman in the hands of the average practitioner.

For detailed discussion, see Alfred C. Beck: Obstetrical Practice. Baltimore, Williams and Wilkins Co., 4th ed., 1947, page 403.

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THE KANSAS PRESS LOOKS AT MEDICINE

WHERE DOCTORS STAND IN MODERN DAY SCENE

The charge frequently made by proponents of socialized medicine, that the medical profession is totally opposed to efforts to improve the public health and solve the problem of the cost of medical care, is ridiculous.

The truth is that the medical profession, as a whole, has given complete cooperation to the various prepayment medical plans which bring medical care within the reach of workers and their families at an average cost of three dollars or so a month. The largest and oldest of these plans now has something like 30,000,000 members. Dozens of others have been started, have outlived the usual growing pains that attend anything new, and are on a stable basis. The scope of the service rendered has steadily been expanded.

Furthermore, the medical profession has urged federal grants to the state for such purposes as tuberculosis and venereal disease control, maternity care, general medical service for people who are actually indigent and can't afford to pay anything for medical service. The responsibility for activating a program such as this belongs to congress.

What the medical profession has opposed is socialization or regimentation which would make the doctor a tool of the politicians. And all the evidence indicates that the American people are also overwhelmingly opposed to that.—*El Dorado Times.*

* * *

ONE MORE TRY

It is interesting to note that the question of what osteopaths should be permitted to do in Kansas by way of practicing medicine and surgery finally seems to be headed toward the supreme court of the United States for a decision.

A hearing for the purpose of building up a proper record of testimony with regard to the claims and facts will be held before a federal court in Topeka. An appeal then will take the matter to the supreme court.

And a couple of million Kansans—not to mention 165 members of the state legislature—will heave a great sigh of relief if the supreme court decision actually points a way to the end of this controversy!

It has been bedeviling the legislature ever since I can remember. Every session an "osteopath bill" comes up. Every time it is considered, fur flies in every direction. Every time it is turned down, recriminations echo throughout the state until it comes up again.

According to the Associated Press, arguments in the case have summed themselves up approximately as follows:

The osteopaths argue that although their profession relies chiefly on manipulation, it also recognizes the necessity of medicines and surgery in certain cases and should not be deprived of this means of bringing about a cure.

The state law, they argue, is oppressive and unreasonable in that it prohibits them from using drugs and surgery, thus mounting in effect to a violation of their right to earn a livelihood under their training and education. The law gives them that right, then immediately takes it away by adding the ban on use of medicines or surgery.

Those arguing the other side of the case declare that if osteopaths were permitted to use drugs and surgery, they would have a complete range of medical practice without meeting the qualifications of the state's medical practice act.

They maintain that the law is not oppressive since it does not discriminate against osteopaths as a group but only sets up standards in regulation of the healing professions to which all must adhere.

So there you are.

If the Supreme Court can pull an answer to this one out of their hats, they will be doing the state of Kansas a considerable favor.—*Iola Register, February 13, 1948.*

* * *

PUBLICITY FOR DISEASED HEARTS

With a blare of trumpets, the state of Kansas announces the appropriation of $10,000 from its emergency fund for medical school equipment which will make possible better diagnosis, study, and treatment of heart disease.

Heart disease, as the term is loosely used, is mankind's greatest killer.

It produces one hundred times as many hopeless invalids, acute sufferers, and deaths each year as does infantile paralysis. Yet $10,000 is less than the sum the city of Hutchinson alone contributes voluntarily each year for the alleviation of infantile paralysis.

Even $10,000 is a start and a good one, but what heart disease most suffers from is the lack of a good tear-jerking press agent.—*Hutchinson News-Herald, November 19, 1947.*

Postgraduate Clinic on Cancer

A postgraduate clinic on cancer will be presented in five cities in Kansas from March 19 to March 24 under the auspices of the Kansas Medical Society, the Kansas State Board of Health and the University of Kansas School of Medicine, with financial assistance from the Kansas Division of the American Cancer Society.

The following schedule has been announced: Wichita, March 19; Hays, March 21; Topeka, March 22; Emporia, March 23; Pittsburg, March 24. The program will be identical at each center with afternoon and evening sessions. A fee of $5.00 will include a dinner ticket as well as the program.

Speakers for the course are Dr. Brian Blades, professor of surgery, George Washington university; Dr. Ira T. Nathanson, assistant professor of surgery, Harvard university; Dr. Grantley W. Taylor, associate in surgery, Harvard university.

Statistics on Life Insurance Examinations

Physicians who give life insurance examinations will be interested in information recently released by the Institute of Life Insurance, reporting that 95 out of 100 applicants obtain policies. A recent analysis of one year's applications shows that 85 per cent obtain standard rate policies and 10 per cent qualify only for extra rate policies.

Heart disease and high blood pressure constituted the chief cause of uninsurability, accounting for one-half of all rejections, and overweight was another important factor. Fewer than one-half of one per cent of all persons applying for insurance failed to obtain it because of underwriting qualifications other than physical, occupation, location of residence, excessive drinking and other personal habits.

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National Health Assembly in May

Oscar R. Ewing, federal security administrator, recently announced the formation of a National Health Assembly, to be held in Washington, D. C., May 1-4, 1948. The assembly is being set up as a result of the message of President Truman to Mr. Ewing requesting the development of feasible national health goals for the next 10 years. Preliminary estimates are that more than 700 people will attend the sessions.

Twenty-four representatives of public and private organizations and agencies, mostly lay persons, have been invited to serve on the executive committee of the assembly. Dr. George F. Lull, secretary and general manager of the A.M.A., is one of the group, as is also Dr. Louis I. Dublin, vice president and statistician of the Metropolitan life insurance company.

Mr. Ewing defines the work of the assembly as follows:

"To see what we have—to know accurately the health facilities and personnel of the nation and of each community.

"To determine what we need. The difference between the two will show us our health deficits.

"To devise feasible methods of meeting these deficits."

In announcing the assembly Mr. Ewing made the following statement: "I consider the request of the President one of the most important assignments ever given in peace time to a federal agency, and the projected National Health Assembly can be of tremendous value in helping the Federal Security Agency in carrying it out.

"Meeting together, spokesmen for the medical and health profession, for our great national voluntary health organizations, and for the citizens generally will have an opportunity to examine every facet of the problem."

New Surgeon General

Announcement has been made of the appointment of Dr. Leonard A. Scheele as surgeon general of the United States Public Health Service, to take office on April 6, when the term of the present surgeon general, Dr. Thomas Parran, expires. Dr. Scheele, who is 40 years old, is the youngest man ever to become surgeon general in the history of this country. During the war he was assigned to the Army, and since last July he has been director of the National Cancer Institute.

Lilly Chairman Dies

Josiah K. Lilly, 86, chairman of the board of directors of Eli Lilly and Company, died February 8. A son of the founder of the company, he first worked for the Lilly organization at the age of 14, delivering Lilly products to a nearby wholesale druggist in a wicker basket. After studying pharmacy he became superintendent of the plant, then president of the company and chairman of the board.

Public Health Service Grants

A million and a half dollars—the largest grant of Public Health Service funds ever to be given at one time—was awarded last month to a total of 64 colleges, research laboratories and public health institutions throughout the country by the National Advisory Cancer Council of the National Cancer Institute, Bethesda, Maryland. An award of $750,000 for clinical and basic biological research was also announced.

The list of grants included $25,000 to the University of Kansas Medical Center for coordination of cancer teaching and other cancer activities and $1,000 to Kansas State College for a study of biological tests of malignancy. The Midwest Research Institute, Kansas City, Missouri, was awarded $8,262 for syntheses of Diphenylethylamines for treatment of cancer.

Before awarding these grants, provision had been made for substantial sums for cancer control projects by each state department of health, a total of $2,500,000 for all the 48 states and the territories.

Record Number of Student Nurses

Enrollment of approximately 40,000 new student nurses in the nation's 1,227 schools of nursing during 1947, a peacetime record, was indicated at a meeting of the 1947 Student Nurse Recruitment Committee. The figure was estimated by representatives of the National Committee on Careers in Nursing, American Red Cross, Advertising Council, American Medical Association, American College of Surgeons and the American Hospital Association.

Determined after a study of projected enrollment figures tabulated from surveys conducted by the committee during the 1947 campaign, the 40,000 estimate indicates an increase of 1,900 over the previous peacetime high in 1940, and is 9,000 over the 1946 total. Goal for the 1948 campaign will be 50,000 new nursing students.

Society for Prevention of Blindness Meets

The National Society for the Prevention of Blindness will hold its 1948 conference at the Radisson hotel, Minneapolis, Minnesota, April 5-7. Subjects to be discussed include public health responsibility for eye health, vision in education, organizing the community for sight conservation, teamwork for industrial eye care, and a study of scientific advances in prevention of blindness. Advance registrations may be made with the society at 1790 Broadway, New York 19, New York.

Schering Award for 1948

The Schering corporation of Bloomfield, New Jersey, announces the subject for its 1948 manuscript contest, "The Role of Hormones in the Maintenance of Pregnancy." Prizes of $500, $300 and $200 will be awarded the three undergraduate students of American and Canadian medical schools whose manuscripts are judged best.

Medical Aspects of Atomic Explosion

More than 20 of the country's schools of medicine accepted invitations to send representatives to a five-day course on medical aspects of atomic explosion at the Army Medical Center, Washington, during January. The course is sponsored by the medical services of the armed forces and the Veterans Administration and by the Armed Forces Special Weapons Project.

Given once each month since last October, the course was opened in December to medical school representatives. Some attended in December, others in January, and a third group was present for the February course. A total of 430 doctors had attended at the end of January.

Because it is only five days in length, the course does not take up in detail the technical aspects of radioactivity, but is concerned only with the fundamentals of radiation hazards, diagnosis and treatment. Instructors are specialists in various phases of radiation and blast injury from the Army, Navy, Public Health Service, Veterans Administration, Atomic Energy Commission and Armed Forces Special Weapons Project.

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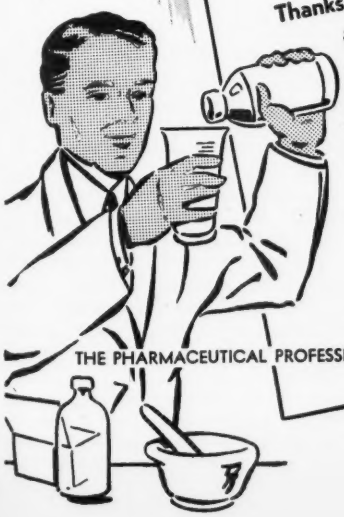

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Public Health Association to Meet

The annual meeting of the Kansas Public Health association will be held in Topeka, April 15, 16 and 17, with headquarters at the Jayhawk hotel and sessions in the assembly room of the municipal auditorium. The theme of the meeting is "Public Health Education and Community Organization."

A number of prominent speakers will appear on the three-day program. The laboratory and sanitation sections will hold separate meetings on April 15, and both groups will meet together for general sessions on April 16 and 17. Two banquets with outstanding guest speakers will highlight the program. Dr. Reginald M. Atwater, executive secretary of the American Public Health association, New York, will address the group at the banquet on Thursday evening at the Jayhawk, and Dr. L. E. Burney, commissioner of the Indiana State Board of Health, Indianapolis, will be principal speaker on Friday evening. Luncheon meetings will be held on Friday for health officers, public health nurses and sanitarians.

The Kansas Public Health association welcomes new members and extends an invitation to the annual meeting to all who wish to attend.

Expand A.M.A. Speakers' Project

The Board of Trustees of the A.M.A. has assigned a new duty to the Bureau of Health Education, the supervising of a program designed to provide speakers where they are needed throughout the United States.

All groups wanting speakers from A.M.A. headquarters, especially units of the Woman's Auxiliary, are to register their needs with the Bureau. These requests will be coordinated with the availability of traveling members of the headquarters staff whenever possible. If successful, the plan can be the nucleus for a nationwide speakers' bureau.

American Hospital Association Convention

The 15th anniversary convention of the American Hospital association will be held in Atlantic City, September 20-23, with headquarters at the Traymore hotel. Morning sessions will be joint meetings of the assembly and the House of Delegates, devoted to study of two problems, care of the patient and hospital finances. Afternoon sessions will be large general meetings. There will be educational and commercial exhibits throughout the meeting and a number of social events.

New Antiseptic Ointment

The National Drug company of Philadelphia announces the introduction of a new antiseptic ointment possessing a wide bacterial spectrum against certain anaerobes, gram-positive cocci and bacilli and gram-negative bacilli, including Proteus.

The ointment is introduced as Acr-Allantomide ointment. It is a combination of 9-aminoacridine hydrochloride 1:500, sulfanilamide 10 per cent and allantoin two per cent, in an aromatized, water miscible base. It is indicated in traumatic wounds, postoperative wounds, topical ulcers, second and third degree burns, frostbite, amputation stumps, and in all lesions potentially contaminated.

Report on Poliomyelitis

A study of the 1946 outbreak of infantile paralysis in Chicago was made by two physicians of the city, Dr. Archibald L. Hoyne and Dr. Peter J. Cotsirilos, who reported their findings in the Illinois Medical Journal. The report emphasized the importance of nutrition in the background of the disease, as the doctors noted it seemed to be a constant factor in susceptibility.

In a study made in 1916 it was mentioned that victims usually were exceptionally well nourished, and recent reports indicate that a deficiency of thiamine seems to increase resistance to the disease in experiments with mice. Some authorities believe that the virus, as a parasitic organism lacking the power to live independently, must have a well-nourished host on which to feed. Poorly nourished children, therefore, may exhibit a relatively great resistance to the disease.

The study included 225 cases admitted to the contagious disease department of Cook county hospital in 1946 with a fatality rate of four per cent.

Study of Sterility Continued

The American Society for the Study of Sterility will hold its fourth annual national session at the Congress hotel, Chicago, June 21 and 22. Dr. Edwin C. Robertson, chairman of the Department of Obstetrics and Gynecology of Queens college, Ontario, Canada, is chairman this year. The program may be secured from Dr. John O. Haman, 490 Post street, San Francisco 2, California.

Pediatrics for General Practitioners

The areal meeting of the American Academy of Pediatrics will be held at the hotel Schroeder, Milwaukee, Wisconsin, June 28-30, 1948. Attendance is not limited to pediatricians, and all members of state medical societies in the area are invited. Registration fee, including a ticket to the banquet, is $10. Advance registrations may be made by writing Dr. C. G. Grulee, Secretary, American Academy of Pediatrics, 636 Church street, Evanston, Illinois.

Statistics Available on Paralysis

The 1948 edition of "Facts and Figures about Infantile Paralysis" is now available to physicians and public health workers, and may be secured by writing the National Foundation for Infantile Paralysis, 120 Broadway, New York 5, New York.

Statistics on the disease, revised yearly, are gathered and translated into tables, charts and maps to show incidence, age and sex distribution, case rates, crippling conditions and mortality. This year the edition includes data on the disease in foreign countries.

Promotes Enrollment of Student Nurses

The American Nurses' Association, working in close cooperation with each state nurses' association, is exerting nationwide efforts to maintain a continuing supply of nurses by promoting enrollment in accredited schools.

The first step, as outlined by Miss Ella Best, executive secretary of A.N.A., is the dissemination of information concerning professional nursing service and nursing education to all persons and organizations in a position to recommend the profession as a vocation. To this end, folders containing five informative pamphlets have been forwarded to each state association with a request that they be relayed to officials in each state, commissioners of education, heads of guidance bureaus, high school principals, college deans and others.

The five pamphlets, all of which are available without charge, are as follows: Nursing is a Great Profession, Schools of Nursing, Educational Funds for Student and Graduate Nurses, Opportunities in Nursing, and Plan Your Own Career in Nursing.

Reaching more than 23 million people . . .

This Parke-Davis "See Your Doctor" message will appear in LIFE and other national magazines.

A reproduction in full color will be sent on request. Write Parke, Davis & Company, Detroit 32, Michigan.

Some things you should know about operations

No. 210 in a series of messages from Parke, Davis & Co. on the importance of prompt and proper medical care.

OF ALL THE RECENT ADVANCES in medical science none have been more dramatic than those in surgery and the fields related to it. Take appendicitis, for instance.

Not very many years ago, having your appendix out might have meant a fairly long and uncomfortable hospital sojourn, followed by several tedious weeks of getting back your strength. And with it all you might have had good reason to fear such complications as peritonitis or pneumonia.

Nowadays, except for a few rare cases, the removal of an appendix is not considered a serious operation. And many operations which were considered of major seriousness as recently as 1930 are now often relatively simple.

Because of notable advances in training and surgical skill, many of the risks have been almost eliminated. Complications following operations are far less common. And most patients recover in a shorter time, and with less discomfort than formerly.

Such progress in surgery has been hastened by significant developments in four important fields.

1. Anesthesia. The administration of anesthetics has become a specialized science. New anesthetics have been developed—less toxic, less upsetting to respiration and heart action. With modern anesthesia the patient has a far easier time when undergoing surgery. Post-operative nausea and vomiting, which were previously almost taken for granted, are now much less frequent.

2. Infection-fighting drugs. Peritonitis, once feared as a frequent complication of abdominal surgery, today is uncommon. The use of such agents as the sulfa drugs and penicillin—to treat infection or to guard against it—has almost eliminated many of the infections which formerly constituted the greatest dangers in surgical procedures.

3. Early ambulation. Doctors have found that getting patients out of bed soon after operations not only speeds recovery, but also prevents many of the discomforts formerly suffered. Bowel and urinary functions are quickly restored. Gas pains are usually avoided. It is not unusual nowadays for a patient to be well enough to go home from the hospital in less than ten days after a major operation.

4. Body Nutrition. One of the problems in surgery has been that the condition which makes an operation necessary is usually one which has depleted the patient's nutritional reserves, and therefore lessens his ability to recover promptly from the operation itself.

In recent years, however, medical science has broadened its knowledge of body nutrition.

Today, it is possible to determine in what a patient's body is deficient—whether he needs whole blood, vitamins, salts, carbohydrates, protein.

Each of these elements can be replaced—making it far easier for the patient to go through an operation. Post-operatively, also, recovery is hastened by supplying the body's needs in easily assimilated form.

SEE YOUR DOCTOR. Give him your complete confidence at all times. If he advises an operation, follow his recommendation promptly. With modern surgery, with modern hospital care, you have little reason to be afraid.

Remember, too, that when surgery is indicated, a delay may be dangerous. Prompt action is likely to give you a quicker recovery—and an easier one!

Makers of medicines prescribed by physicians **PARKE, DAVIS & CO.** *Research and Manufacturing Laboratories, Detroit 32, Mich.*

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ABSTRACTS

Improvement of Body Mechanics

Improvement of Body Mechanics in Adolescent Children. C. D. Sweet. Am. J. Dis. Child., 74:503-506 (October) 1947.

One of the commonest problems presented to physicians by the adolescent patient is faulty posture or body mechanics. The parents become more critical of the child at this age because previously they had thought he would outgrow faulty posture, and now that he is nearly fully grown they want immediate correction. The physician must instruct the parents and the child in simple and effective means of improving bony mechanics and must win the cooperation of the child by making a direct arrangement between himself and the child to carry out a program. The child must be told that his faults of posture are quite common, unless he has some extraordinary deformity, and, therefore, are not a basis for personal criticism. The static muscular effort which is demanded to hold the body fully upright (at its greatest height) can be maintained for only short periods, and relief is sought by a slumping position. The child must be assured that the discomfort of the straightened posture will soon disappear and that the improved appearance and function of his body will repay effort many times. As he observes the fulfilment of the promise, his full cooperation is won.

The most effective way to teach a child to walk well is to have him carry a heavy sandbag on his head for a few minutes each day. All exercises must achieve maximum muscle stretching.

Finally, he is taught to stand with one foot before the other, resting his weight on both or either, with his spine fully extended and his knees and his hips slightly flexed. In this position, when fatigue is felt, it is necessary only to interchange the positions of the feet for complete relief. —*D.R.D.*

* * *

Insulin Resistance

Insulin Resistance. Arnold R. Axelrod, Sidney Lobe, James M. Orten and Gordon B. Myers. Ann. Int. Med., 27:4, 555-574 (October) 1947.

These authors note that a depancreatized man is relatively insulin sensitive and requires only 35 to 50 units daily. Insulin resistance in a diabetic is considered to be present when doses of 200 units or more per day fail to reduce the blood sugar in non-acidotic individuals during 48 hours observation.

A classification of causes of insulin resistance is presented as follows:

A. Unavailability of administered insulin due to
   1. Failure of absorption
   2. Excessive output of hormonal antagonists
B. Neutralization or destruction in blood or tissues
   1. Abnormal leukocytic activity
   2. Excessive output of hormonal antagonists
   3. Development of antibodies
C. Inability of end organs to utilize insulin
   1. Acidosis and/or infection
   2. Diffuse hepatic disease.
D. Unknown

Three cases are then presented which demonstrate the appearance of insulin resistance with its subsequent disappearance. Detailed studies were conducted in an effort to classify the resistance into any of the above known groups, but without success.

They emphasize the necessity for meeting insulin requirements in such cases, regardless of the 24-hour amount needed. In their cases, single large doses proved better than multiple small doses.

Taurine was given in one case because of a reported potentiating effect on insulin in the rabbit, and was without benefit. Stilbestrol was used in two cases because of reports that estrogens increase insulin sensitivity. Results were encouraging, but not conclusive.

The greatest reductions in insulin requirements in the three reported cases occurred spontaneously and apparently independent of therapy.—*E.J.R.*

* * *

Nerve Block for Fractured Ribs

Nerve Blocking, Therapy for Fractured Ribs. D. J. Richardson and E. M. Popper. Dig. of Treat. (from Jnl. Thoracic Surg.), 11:7, 411-413 (January) 1948.

Two hundred seventeen patients with fractured ribs were treated with either paravertebral or intercostal nerve block. It proved useful in controlling pain, in preventing more serious complications and in reducing mortality.

The procedure enables the patient to cough freely without pain, hence promotes tracheobronchial drainage and normal or increased pulmonary ventilation, permits abandonment of voluntary splinting of respiratory movements and possibly releases bronchial and bronchiolar spasm. The need for rigid immobilization is eliminated.

The injection of a single intercostal nerve does not always afford complete relief, since the innervation of the rib by accessory filaments from the contiguous nerves is not interrupted, so if intercostal block is used the one above and below must also be injected. Paravertebral injections are to be preferred, and it is recommended that in addition to the nerve corresponding to the fractured bone the next above and below are injected. The technic: a wheal is made along the midaxillary line in the intercostal space below the rib involved, through this wheal a 5 cm. needle unattached to the syringe is introduced and passed under the lower border of the rib in the direction of the intercostal nerve, and injection is completed with 3 to 5 cc. of solution. Meticulous care is necessary to avoid intravascular or intrapleural injection. A drop of solution on the needle hub opening is advised as it would be sucked in if the pleural cavity was entered and gentle aspiration would indicate presence of the needle in a vascular channel. Infiltration at the site of fracture has been used but due to usual contusions and other reasons is inadvisable.

Dangers consequent to those procedures are the possibility of entering the lung, the pleural cavity, a blood vessel or the subarachnoid space. Careful aspiration will obviate this. Less than 25 per cent required more than one treatment.

A solution of (1 to 270) procaine followed by the injection of absolute alcohol was used in two-thirds of the patients. When procaine and absolute alcohol were used together the relief of pain was longer than by the use of procaine alone.

These results indicate that relief of pain with nerve block is of significant value in preventing pulmonary infections and death of patients with fractured ribs.—*P.W.M.*

* * *

Growth During Adolescence

Physical Growth during Adolescence. H. C. Stuart. Am. J. Dis. Child., 74:495-502 (October) 1947.

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There are three major phases in the progress of growth from conception to full maturity. The first and last of these phases are characterized by cycles of acceleration followed by deceleration in growth rates, both are accompanied with striking developmental changes. The middle phase, in contrast, is one of relatively steady, moderate progress in both growth and maturation. Maximum growth occurs most commonly in this country among girls during the 13th year of life and among boys during the 15th year.

This paper is devoted to growth during pubescence, which is characterized by acceleration in the rate of increase up to a peak of rapid gain, followed, after a variable but brief period of maximum growth in the major body measurements, by rapid deceleration. The period of rapid growth of skeletal muscles is considerably longer than that of growth in height, particularly in the boy. Early maturing children tend to have narrow shoulders, broad hips and short legs and to accumulate fat in the subcutaneous tissues readily, whereas late maturing children tend to show the reverse of this picture. The body growth, osseous maturation, growth of the sex organs and differentiation of secondary sex characters normally progress together in associated stages. As an example, girls who reach their maximum growth two years before the average will reach the menarche about two years in advance. They will also attain the successive stages of breast and hair development, will be advanced in osseous development and will also cease growing about this much in advance of the average. Psychologic and emotional characteristics of adolescence appear in a somewhat parallel manner. Hence, the behavior at a given age of a late maturing girl may be expected to be very different from that of one who is maturing early.

Criteria for the appraisal of maturation during the adolescent years are of practical importance in connection with health examinations and, particularly, in the understanding of persons who manifest unusual behavior during this time. The physician should learn to note the stages of development of the various sex characters which can be observed and to appreciate what hidden changes are probably associated with them. Body measurement standards, weight standards, studies of roentgenograms, hormone assays and determination of other physiologic states may be used to advantage in unusual cases.

Food requirements are extremely high during pubescence. Suitable food will be eaten if it is made available. However, unsuitable foods will satisfy the appetite, and faulty habits of food selection formed in earlier years will often be carried over into this period and prevent the taking of an adequate diet. The principal need is for a high protein diet, covered by a liberal allowance of calories. The obesity sometimes present during this period is important from the physical and from the psychological standpoint. The effect on participation in sports and other activities, and hence on muscular development, body mechanics and physical fitness at maturity, is probably great. The effects on social adjustments, the acquiring of skills and the child's emotional life are probably equally important. Chronic undernutrition during childhood appears to retard development as well as growth. Racial differences in respect to age of pubescence seem to be explained in part by socioeconomic factors and national dietary customs. The pubescent child is in a stage of profound change and instability, often of physical stress and emotional turmoil.

Lack of uniformity in advancement, or retardation, in physical, intellectual or emotional fields gives rise to problems.—*D.R.D.*

Kirschner Wire Traction

Kirschner Wire Traction in Elbow and Upper Arm Injuries. Frederick M. Smith. Am. Jnl. Surg., LXXIV:5, 770-787 (November) 1947.

A device for providing skeletal traction for fractures of the humerus is described. A Kirschner wire is inserted through the olecranon and traction is provided through an overhead pulley. A second line of traction is furnished on the humerus laterally by a swathe on a spreader which provides traction over a pulley at the side of the arm. The forearm is also suspended by a swathe and spreader with overhead traction which is counter-balanced so that the forearm, which is put up at about 90 degrees with the humerus, may be flexed or extended at will. Illustrations and x-rays are provided and the results in a series of 93 cases are evaluated. (NOTE: The device would appear to be especially valuable where the patient is confined to bed and therefore unable to wear a "hanging cast.")—*T.P.B.*

* * *

Anesthesia Study Commission

Anesthesia Study Commission—Findings of Eleven Years' Activity. Henry S. Ruth, Frederick P. Haugen and D. Dwight Grove, J.A.M.A., 135:881-884 (Dec. 6) 1947.

The authors have outlined the activities of the Anesthesia Study Commission of the Philadelphia County Society during the 11 years of its existence. Its purpose and objectives have been to develop continuous improvement in anesthesiologic care by a frank and public discussion of the anesthetic practices involved.

This has been one of the first efforts of a group of trained anesthesiologists to study critically a large group of fatalities occurring during or shortly after anesthesia. The deaths themselves are not emphasized, but rather the educational factors that can be derived from the circumstances under which they occurred.

The cases studied are offered this commission on a voluntary basis from the various hospitals in the area of metropolitan Philadelphia. Complete anonymity is the rule. The name of the hospital, patient, surgeon or anesthetist is not mentioned. The case is presented by the chair, discussed freely from the floor and then a vote is taken as to whether the death was preventable from the standpoint of anesthesia. If it was preventable they decide what was the fault; i.e. choice of anesthetic agent, technic, management, etc. The probable cause of death and contributing factors are also decided. Recommendations are made as to how the particular case might have been better managed.

The authors point out that until the last two decades little emphasis was placed on the contributions of anesthesia to the total of surgical fatalities. In many institutions anesthesia has not progressed very much in the century since its introduction.

The authors stress the thesis that rather than blaming any particular drug or technic for fatalities one must first look to the skill and experience of the person managing the anesthetic and the care of the patient during the period of anesthesia and immediately thereafter.

Interest in this pioneer group has greatly increased during recent years and the need for many more such groups is indicated.

Of the total of 307 cases reported 47 per cent were classified as preventable. Thirty-eight per cent were classified as non-preventable, the other 15 per cent unclassified chiefly because of inadequate data on which to base an opinion. A higher incidence of preventable deaths occurred in patients in good preoperative physical condition

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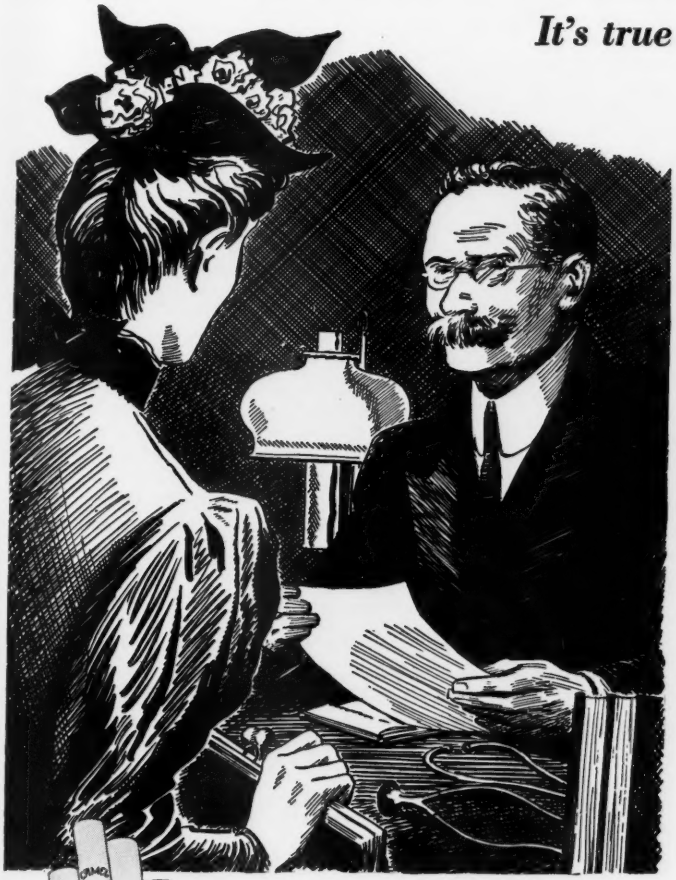

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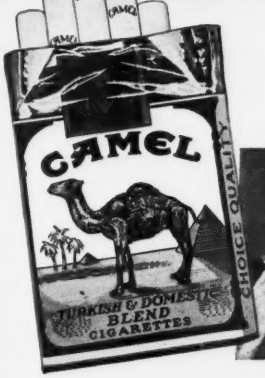

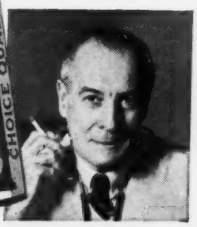

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and in age groups usually considered optimum risks for anesthesia. The relationship of preventable deaths to the use of the various agents and methods and the probable cause of death is presented. The need for postoperative observation rooms under trained personnel and with adequate equipment for aspiration, resuscitation and shock therapy was stressed. Eight tables, one reference.—*H.F.S.*

* * *

Nitrogen Mustards in Hodgkin's Disease

Nitrogen Mustards in Hodgkin's Disease. M.I.R. Ap. Thomas, H. Cullumbine. Digest of Treatment (from Lancet) 11:7, 409-410 (January) 1948.

Twenty-one cases of Hodgkin's disease, in an advanced stage, some recurrent after radiotherapy and four other reticuloses, were given intravenously every 24 hours for four days, 0.1 to 0.2 mg. of the bis form of the drug per Kg body weight. Dilution in 500 cc. saline proved to have no advantage over using 10 to 20 cc. of saline as diluent. Nausea, vomiting, thrombosis at the site of injection and leukopenia (3 to 21 days after treatment) accompanied by anemia, thrombacytopenia stomatitis and petechial hemorrhages were observed in some patients.

Not all patients improved. Thirteen had two courses and four had three courses, and of those four only two were improved. A case each of reticulum cell sarcoma and of mycosis fungoides showed no improvement. One of two cases of lympho-sarcoma improved. Improvement in general condition, nodes and other signs occurred more quickly with nitrogen mustard than with x-rays but was of shorter duration.

The authors conclude that radiotherapy is to be preferred as a first treatment in Hodgkin's disease since, though improvement is slower than with nitrogen mustards it is maintained longer and the side effects are less serious.—*P.W.M.*

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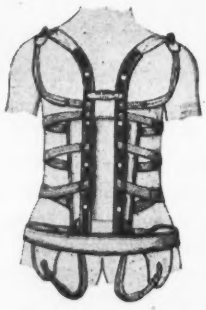

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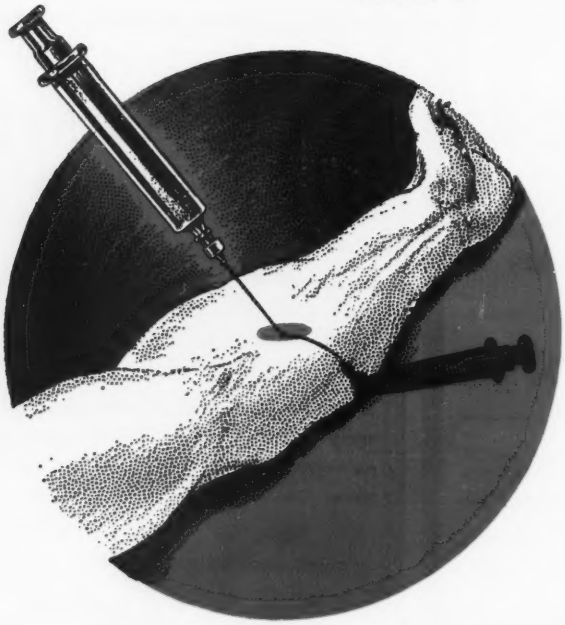

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1. Arbesman, C.E., et al., Jl. of Allergy 17:275, Sept. 1946
2. Feinberg, S.M., and Friedlaender, S., Am. Jl. Med. Sci. 213:58, Jan. 1947.
3. Fuchs, A.M., et al., Jl. of Allergy 18:385, Nov. 1947.

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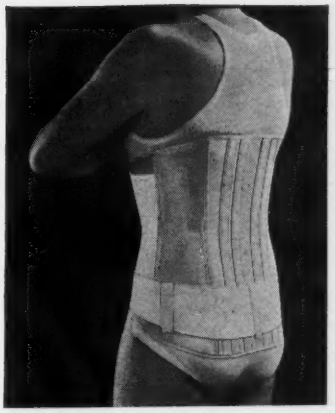
Squibb, E. R. and Sons.....
Trowbridge Training School.
University of Kansas Refresh
Winthrop-Stearns, Inc. .....
Wyeth, Inc. .....
Zemmer Company .....



DATE DUE

Stormont Medical Library,
State House,
Topeka, Kansas

1000 cc. flasks
500 cc. flasks
125 cc. flasks
for hospitals.

1 LITER (1000 cc.)
AMIGEN 5%
IN 5% DEXTROSE SOLUTION
A sterilized, aqueous, non-pyrogenic, 5 percent (weight/volume) solution of a pancreatic hydrolysate of casein containing amino acids and polypeptides with 5 percent dextrose. Hydrogen-ion concentration adjusted to pH 6.8.
WARNING: Do not use if the solution is cloudy or if sediment is present. The contents of this bottle must not be used for more than one infusion. For storage, keep the unopened bottle in a cool place.
Use before
Test No.
MEAD JOHNSON & CO.
EVANSVILLE, IND., U.S.A.

COUNCIL-ACCEPTED
AMIGEN
for parenteral administration of amino acids

The function of Amigen and Protolysate is to supply the amino acids essential for nutrition. Both can be given in place of protein when protein cannot be eaten or digested, or in addition to protein when the protein intake is insufficient. Administered in adequate amounts, they prevent wastage of protein, restore previous losses, or build up new body protein.

COUNCIL-ACCEPTED
PROTOLYSATE
for oral and tube feeding of amino acids

1 LB. NET (454 GM.)
MEADS
PROTOLYSATE
For Oral Administration
A dry enzymic digest of casein containing amino acids and polypeptides, useful as a source of readily absorbed food nitrogen when given orally or by tube. Protolysate is designed for administration in cases requiring predigested protein. The mode of administration and the amount to be given should be prescribed by the physician.
MEAD JOHNSON & CO.
EVANSVILLE, IND., U.S.A.

Like Amigen, Protolysate is an enzymic digest of casein and consists of amino acids and polypeptides. Like Amigen, Protolysate supplies the nitrogen essential for maintenance, repair and growth.

Unlike Amigen, which may be employed both orally and parenterally, Protolysate is designed only for oral use.

1 lb. cans at drug stores

MEAD JOHNSON & CO., EVANSVILLE 21, INDIANA

There is no shortage now of AMIGEN for parenteral use. There is no shortage now of PROTOLYSATE for oral use